



# College AND UNIVERSITY Business

**MAY 1949: Federal Insurance Favored • Managing Endowment Funds  
Centralized Purchasing • Classroom Buildings Without Corridors  
Rebuilding Field House Roof • Financial Policies in Food Service**



## WHAT'S WRONG WITH OUR ANNUAL CONVENTIONS?

**CHARLES HOFF**

Finance Secretary, Municipal University of Omaha  
President, National Association of Educational Buyers

"CONVENTIONS IN '48 HIT \$200,000,000" SAYS AN A.P. report out of Chicago recently. The following week the same news agency, under a Miami Beach date line, stated: "There is a saying along Collins Avenue that the 1949 winter tourist is tighter with a buck than at any time since the war." These two reports should serve as a warning to college convention chairmen. Business is booming, but we must begin to evaluate and select!

Conventions are as typically American as baseball, chewing gum, and luncheon clubs. Even college administrators are guilty of enjoying them. Throughout the nation college presidents, business managers, and boards of trustees are preparing budgets for the 1949-50 school year. All are faced with inflated costs of operation and much lower operation income per student. Most of them also are faced with an "epidemic" of convention-travel requests.

Professional meetings are of real value. In fact, staff travel is one of the criteria used by a number of the accrediting agencies to determine whether or not colleges are providing proper in-service training for their staff members. However, every president and business officer must begin carefully to evaluate the meetings attended in terms of what honestly comes in return to the college for the expense involved. Vacation trips and pleasure junkets, under the guise of "professional conferences," must be placed on the taboo list permanently.

"Too much minutia, too few top management problems. Too much verbosity, too little *demonstration* of proved methods, and too few *exhibits* of what's new and what's best. Too many 'authorities' on social and political subjects, too few of *our own* successful administrators from *medium sized* colleges who know our problems and themselves have found the practical solutions. Too many generalities, too few specifics.

"Too often there are slipshod planning and execution of conventions. Programs are too crowded. Meetings fail to start on schedule. Rooms become stuffy. No breaks are provided for the audience to

stretch, inhale fresh air, drink a cup of coffee, and just talk over what has been said with one another or with the speakers."

These are a few of the criticisms I have heard about many of our administrators' conventions. Others include: "Hotels have gone crazy with their charges. Banquets are far too expensive and often they contribute little or nothing to the real value of the convention." (Have not all of us, at one time or another, shuddered at those \$5 to \$8 banquet tickets?) Another criticism is: "Too little time allowed for seeing the campus of the host institution."

Delegates should be able to take memoranda home with them from the convention and not be required to await the printed proceedings. Mimeographed copies of outstanding papers on current topics should be made available for delegates. To assist in maintaining follow-up contacts with acquaintances made at these meetings, mimeographed rosters of all persons in attendance also should be handed out.

Perhaps the most practical way for a college president to evaluate conventions attended by his staff is to require that a brief, written report be made to him of every convention attended by administrative and academic staff members. This probably is his only method of determining whether the costs of today's conventions are really justified and which of the many travel requests should be approved. Other department heads can thus share, to some extent, the benefits of all staff travel.

Let's meet this challenge by insisting that the various associations to which we as college administrators belong set their houses in order and pay more attention to the planning and execution of conventions, as is being done by private industry today. Let's insist that conventions be planned on the clinic or workshop basis and used to improve every delegate professionally. Let's insist that a full dollar's value in training be received for every dollar spent by the member institutions for convention participation. Let's be "tighter with every buck" that we spend, and allow to be spent, for conventions!

# College AND UNIVERSITY Business



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PACIFIC COAST  
REPRESENTATIVES  
ROY M. McDONALD & CO.  
LOS ANGELES, SAN FRANCISCO  
SEATTLE

Published monthly by The Nation's Schools Division, The Modern Hospital Publishing Co., Inc., 919 North Michigan, Chicago 11, Ill., U. S. A. Otho F. Ball, president; Raymond P. Sloan, vice president; Everett W. Jones, vice president; Stanley R. Clague, secretary; J. G. Jarrett, treasurer. Copyright 1949, by The Nation's Schools Division, The Modern Hospital Publishing Co., Inc. Accepted under the Act of June 5, 1934, at Chicago, Ill., authorized March 4, 1947. Published on the tenth of the month of the date of issue. Change of address should be sent thirty days in advance of publication date.

Vol. 6, No. 5, May 1949

May 1949

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## Among the Authors



J. L. Phalan

J. LAURENCE PHALAN, specialist for economics in the division of higher education of the U.S. Office of Education, had extensive teaching experience in college economics before accepting his present position. He has been a member of the faculty of Boston College, Boston University, and Middlebury College, besides having had five years' experience in business.



C. S. Sifferd

CALVIN S. SIFFERD, supervisor of counseling for men's residence halls at the University of Illinois, has been high school teacher and country newspaper editor. He went to the University of Illinois on special assignment with veterans and has been in his present position since 1946. He has contributed frequently to magazines in the educational field. He has a yen to become dean of students in a college small enough to know all the students by the time they are graduated.



L. F. Robbins

LESLIE F. ROBBINS, purchasing agent of the University of Colorado, has been a member of the university staff since 1921, when he started as stores clerk. Purchasing agent since 1930, he is an active member of the National Association of Educational Buyers and the National Association of Purchasing Agents. He has to his credit a number of magazine articles.



J. J. Ritterskamp Jr.

JAMES J. RITTERSKAMP JR., director of purchasing and stores at Washington University, St. Louis, speaks authoritatively on bookstore problems as a past president of the National Association of College Stores in 1939-40. Also active in college purchasing agent circles, he was president of the Educational Buyers Association during 1946-47. His days are not all work, however; he enjoys gardening as a means of relaxation. . . . HAROLD W. LOMAN, purchasing agent at Pennsylvania State College, is a registered architect as well. He has his hand in the design of buildings on the Penn State campus, the most recent of which have been women's residence halls and a centralized food building. He is serving this year as treasurer of the National Association of Educational Buyers.



W. A. Close

WINSTON A. CLOSE, associate professor and assistant advisory architect at the University of Minnesota, has established his reputation as a ranking architect with many of his projects published in national architectural magazines. He has traveled in Europe and was a navy officer for three years during World War II. Among his special skills are furniture design and the making of architectural models. . . .

HARRY L. WILSON, senior civil engineer of the physical plant department of the University of Minnesota, has been active in civil engineering in the Twin Cities area ever since his graduation from Purdue in 1915. He has been in his present position for eight years.



# Looking Forward

## Seniority

FUNNY HOW SOME THINGS ARE TAKEN FOR GRANTED, isn't it? Consider seniority as an example.

Labor unions have stressed seniority as the fundamental consideration in determining the right of a worker to advance in his trade. This does not necessarily have any correlation with the worker's productivity.

Colleges are not immune to this virus. More than once an individual in the college field has been advanced to the status of department head because "his long years of service merit this recognition." If the promotion is made on the basis of both seniority and competent performance, the institution profits by his leadership; otherwise, no.

Did you ever stop to think how officers in college professional organizations and societies climb the seniority ladder before they sit on the presidential perch? The problem is the initial difficulty in becoming the 32d v.p. on the ticket. From then on longevity and a rugged banquet stomach may be the only requirements for elevation to the presidential chair. "Everything comes to him who sits and waits." Such a procedure is not a system for encouraging the birth of a new idea or the rewarding of initiative.

What about the board of trustees? Why should so many colleges point with pride to 20 or 25 years of service by "faithful trustees"? Maybe the college would have accomplished more in those 25 years if there had been a higher rate of turnover in board membership. Passage of time in itself does not make an individual wiser or more competent. What he is doing with that time is more pertinent to the discussion.

Seniority, without effective performance, becomes an inhibiting factor in an institution's growth. Like war, it does not prove who is *right* but just who is *left*.

## An Open-Door Policy

A COLLEGE PURCHASING AGENT OWES IT TO HIMSELF and to his institution to be aware of significant developments relative to commodities and suppliers. Unless he has that knowledge or is continually attempting to acquire it, he is an expensive member of the staff.

Perhaps there are some in the purchasing agent fraternity who view with something less than enthusiasm the visits of salesmen to their office. They permit their position of purchasing authority to become one of arrogant condescension in their relationships with vendors. By that arrogance they may be shutting off many

sources of information that would be most helpful to them and to their institution. The discourtesy of such an attitude should not be condoned.

Sometimes it is advisable for a product to be demonstrated before a fairly large number of department heads. The purchasing department should arrange the demonstration at a time convenient to all interested parties. There is no excuse for the incident reported recently by a manufacturer's representative who completed a demonstration on one campus, returned to his office 200 miles away, and found a letter from a department head in the same college asking for a demonstration. The department head had found it inconvenient to attend the first demonstration!

An open door to the purchasing agent's office does not mean that time should be wasted in "visiting" with every salesman who comes down the road. It does mean a courteous consideration of a salesman's proposals and the decency to advise him of the potential possibilities for the use of his merchandise on the campus.

Salesmen are human. The quality of merchandise being equal, those salesmen who are treated with courtesy and consideration in the main will provide the best service in meeting the needs of the institution. It doesn't help an institution's public relations program to have a salesman telling others of the shoddy treatment he received. The word gets around.

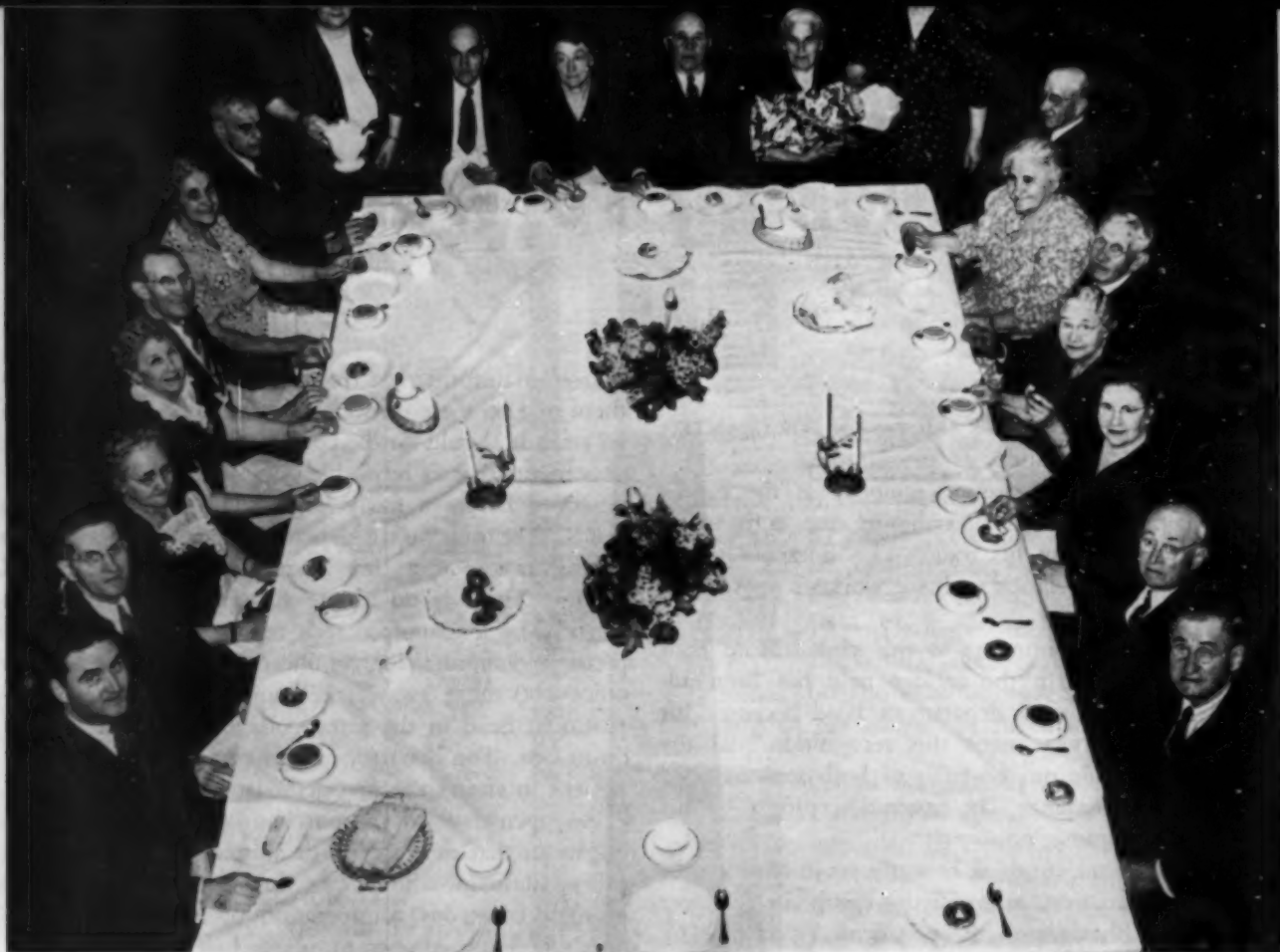
## Muchas Gracias!

APPROXIMATELY THREE YEARS AGO COLLEGE AND UNIVERSITY BUSINESS came into being as a magazine designed to aid college administrators in the operation of their institutions. Since that time readers have occasionally inquired as to the magazine's circulation. In response to these inquiries, all our readers recently were advised as to why their names were on the distribution list.

Since that announcement our mailbag has been overflowing with letters from readers who have commented most generously on the editorial and advertising service of the magazine. There have been so many messages that our staff has been hard pressed for time to acknowledge them.

This demonstration of reader confidence is accepted with humility in the realization that it carries with it a serious responsibility. We will continue to devote our efforts to the production of the best magazine possible to meet the administrative needs of higher education.

As they say south of the border, "Muchas gracias."



Golden Age Club

## College sentiment shifts toward FEDERAL INSURANCE

NUMEROUS BILLS HAVE BEEN INTRODUCED in the 81st Congress designed to increase both the amount and types of benefits under the federal Social Security Act and to extend the coverage of that law.

When Congress convened, educational institutions, both private non-profit and publicly controlled, were exempt from the provisions of the act. However, it is likely that the situation will be changed. Likewise, Congress probably will see fit to amend the benefit provisions of the law, removing some of the inadequacies inherent in the present legislation as well as those resulting from the inflationary spiral of the past years.

While it is likely that educational institutions will be covered by the Social Security Act at some future date—at least on a voluntary basis—the benefits and costs in effect when such coverage exists will be dependent upon later congressional action. The act now provides a number of major types of programs.

Amendments extending coverage of the present federal social security legislation of primary interest to colleges and universities are chiefly concerned with those sections of the act apply-

ing to old-age and survivors insurance. With the exception of unemployment compensation, employees of educational institutions and their dependents are presently eligible for the other benefits to the same extent as other workers.

Maximum benefits that may now be paid under the security act are \$85 a month, irrespective of the dependency situation of the insured. Actual benefits have averaged only \$25 a month. Benefits are computed on the basis of dependency needs, average earned salary, and length of the period in which tax contributions have been paid. The maximum annual salary upon which computations are made is \$3000—the same as the maximum amount upon which deductions are made. Under the present method of computing benefits, a person who has averaged \$3000 or more a year during a period of thirty years of covered employment will be eligible to receive \$52 a month at age 65, plus \$26 for a dependent wife and an equal sum for each dependent child under 18 years of age.

The Advisory Council on Social Security to the Senate committee on finance recommended to that committee in April 1948 that the upper salary

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limit be raised to \$4200. Other recommendations have been made to raise the limit to \$4800. By law the tax percentage is to be raised to 1½ per cent in 1950 and 2 per cent in 1952, both the employer and the employee to pay these amounts.

Recommendations have been concerned with raising benefits received as well as the salary base upon which taxes will be levied. Under the recommendations of the advisory council, primary benefits in the foregoing example would be increased to \$63.75, with secondary benefits proportionately increased.

Closely allied with the need to provide for advanced age is the necessity to provide for survivors in the case of death of the wage earner. The federal legislation is also concerned with that requirement. Survivors' benefits are also computed on the formula used in computing old-age payments. A widow eligible for benefits is entitled to three-fourths the benefits due to the husband at the time of death. To that amount is added one-half the primary benefit for each eligible child under 18 years of age.

#### EDUCATIONAL INSTITUTIONS

Employees in both types of educational institutions—public and private nonprofit—are presently exempt from coverage under the act. Exclusion of both the private nonprofit and the public institution from coverage of employment has been due primarily to problems involved in taxing their pay rolls and to fear by some of federal intervention in the operation of the schools.

There is considerable question regarding the constitutionality of levying a compulsory federal social-insurance tax on state and local governments as employers. For this reason original coverage was avoided, and any future coverage will probably be on a voluntary basis between each of the states and the federal insurance agency.

Some feared that to levy the employer's tax on nonprofit institutions would undermine the traditional tax-exempt status of organizations operated chiefly for religious and charitable purposes. Some leaders in the nonprofit field also believe that an extension of old-age and survivors insurance to that area might impair religious and academic freedom, the traditional separation of church and state, and encouragement of religious, educational and philanthropic enterprises.

**Application of federal insurance to colleges is not too far in the future. There has been a favorable shift of sentiment toward active support of the federal social security program by various groups originally opposed to coverage.**

Two questions are widely discussed regarding the extension of coverage to college teachers. First, do college faculties need the protection afforded by the federal Social Security Act? Second, is there danger that the federal plan will be substituted for better plans currently in effect? It is in respect to the latter question that many objections to extension of the legislation have been found among teachers.

Even under the present \$3000 maximum the full salaries of many college teachers would be subject to tax; at least a large percentage of junior faculty salaries would be so taxed. If the maximum is raised to the proposed \$4800 and coverage is extended, then a high percentage of senior college staff salaries will probably be fully subject to the tax, as shown by fairly recent studies.

The median maximum salary paid to instructors in a representative number of colleges and universities in the academic year 1946-47 was \$2868; the same medians for other staff members were: assistant professors, \$3527; associate professors, \$4070; professors, \$4831. Minimum figures for the same institutions were: instructors, \$2092; assistant professors, \$2770; associate professors, \$3306, and professors, \$3905. Thus, granted that there have been increases as great as 25 per cent of 1946-47 salaries, a large proportion of all wages are still below \$4800 and a sizable proportion are below \$3000.

#### OTHER PENSION PLANS

No complete measurement of the number of employees of higher institutions who have other types of retirement protection can be made on the basis of data now available. In 1946, of 1695 institutions of higher education, 843 had retirement plans; of 559 public institutions, 505 had such plans, and of 1136 private institutions, 338 had plans. It has been estimated that during the same year about 94,500 out of approximately 120,000 instructors were in institutions having formal retirement plans. According to the Advisory Council on Social Security, in all probability not more than half the college teachers participate in retire-

ment systems. There is greater prevalence of plans in the larger institutions than in the smaller, financially weaker institutions.

In both private and public institutions, private plans are found; however, approximately 80 per cent of the coverage in the public institutions is of a publicly supported nature, either employee contributory or noncontributory. Most of the private school plans are held with the Teachers Insurance and Annuity Association (Carnegie Foundation for the Advancement of Teaching) and are employee contributory.

The average benefit received under nonfederal plans is probably in excess of the present federal benefit, particularly under T.I.A.A. plans and other joint contributory plans. In 1947, of 298 T.I.A.A. plans, only seventeen had contributions by employer and employee of less than 5 per cent compared with the 1 per cent federal tax deduction.

Two outstanding weaknesses are found in many public plans: (1) the failure to carry forward in employee possession his accumulation of state contributions upon his severance of employment, and (2) the frequent lack of insurance provision for dependents of the faculty member who dies in service. The latter weakness, of course, can be eliminated by provision for survivor benefits, but generally such provision can be made only if the insured chooses to take reduced retirement benefits.

More nearly adequate provision for carry-over of benefit rights in case of employment severance is found in plans similar to contracts held with the Teachers Insurance and Annuity Association; these contracts are used by the majority of colleges having employee contributory retirement plans financed by annuity contracts. The contract belongs to the faculty member. If he severs employment with the particular college, he carries his contract with him and may continue premium payments himself or share payments with a subsequent employer.

Since no cash payment is made to the teacher when employment termination occurs, the plan is solely to pro-



vide for old age. On the other hand, under the majority of public plans a cash payment of the amount of his contributions, with or without interest, is made to the teacher who leaves the state or local school system. Usually, no credit of the amount contributed by the government agency is allowed to the leaving instructor. These conditions may largely defeat total work-life provision for old age, unless teaching is continuous in one school system. They may also contribute to the freezing of employment with all the possible disadvantages of that situation.

Additional disadvantages may result when change of employment involves transfer between positions subject to the federal social security legislation and noncovered teaching positions.

To receive benefits under the federal plan, the worker must be fully insured or currently insured. He is termed fully insured if he has been employed in covered employment for forty quarter-year periods or for one quarter-year for each two quarters elapsing after 1936; he is deemed currently insured when his work has been covered employment at least six quarters of the period, consisting of the quarter in which death or retirement occurred and the twelve quarters immediately preceding that quarter. Thus, it may be that job transfer under the present exempt status of faculty members results in actual lack of insurance of any nature in spite of their having paid into two funds.

#### POSSIBLE SUBSTITUTION

In discussing the second question proposed—Is there danger that the federal plan will be substituted for better plans currently in effect?—one can make few positive assertions. Theoretically, there can be no doubt of the possibility of such substitution. There can be nothing in federal legislation that would bar the state governments from such action because of constitutionality limitations to action by the former. For the same reason participation of state and local educational agencies in the federal plan probably will be on a voluntary basis.

Proposed legislation has generally stipulated that private nonprofit institutional participation be of a voluntary nature. However, some groups, including the Social Security Administration, have proposed that coverage be mandatory to avoid the possibility of administrative differences arising as a result of differences among the par-

ties concerned and to prevent the federal system from being exposed to a heavy drain caused by a disproportionate number of older persons.

Whether state or local authorities will have the legal right to substitute the federal plan for other plans, if federal coverage is extended, is debatable in the case of employees for whom a state or local plan is in effect. There is, however, little question but that state legislation could reduce the benefits or eliminate them for future employees. In several states, the courts have ruled that a pension is a gratuity and that the state or local legislative body may reduce or stop its payment at any time.

In joint contributory plans the situation may be somewhat different. In such cases the court might rule that such a plan is a contract between the public employee and the government and cannot be changed so far as present employees are concerned. Since the action of one legislative body could not be binding upon succeeding bodies, the plan might be changed as far as future employees are concerned.

Without doubt, much of the fear of educators of possible plan substitution was closely allied with the expressed fears of business groups that the coming of the federal plan would lead to the wholesale elimination of private plans in all types of enterprise. However, the opposite has happened, and the recognition given to pension plans has resulted in a great expansion in the number of privately financed plans. It must be acknowledged that such expansion resulted from negotiation among individuals and was not subject to the mandate of constantly changing governing bodies.

#### TAX EXEMPTION STATUS

Whether or not coverage under the federal plan would result in plan substitution in the private institution depends upon contractual obligations incurred, bargaining power of the individuals, and other factors somewhat similar to those that have existed for many of the 42,000,000 now subject to the federal plan. In the case of those employees, the federal plan seems to have aided in the expansion of private pension plans rather than in curtailment. The Teachers Insurance and Annuity Association has continually advocated extension of the coverage of the federal legislation.

Much of the original antagonism of administrators of private institutions

to the federal plan was based upon the fear that inclusion under it would jeopardize the traditional tax exempt status of such institutions. Proposed legislation allows for the continuation of exemption status. Bills introduced in the 81st Congress definitely provide for continued exemption of nonprofit institutions from other forms of taxation.

#### NONPROFESSIONAL EMPLOYEES

The problem of the nonprofessional worker in educational institutions is of particular importance. Of the 60,000 of such employees it is estimated that few have retirement protection. An analysis of T.I.A.A. plans in effect in 1947 by William Greenough ("College Retirement and Insurance Plans," Columbia University Press, 1948) disclosed that only 80 of 294 such plans covered substantially all employees. This may offer difficulties to both the employee and the school, to the former because of the lack of security, and to the employing institution because of disadvantages in the labor market growing out of inability to attract workers through retirement and survivorship protection.

The favorable shift of sentiment toward active support of extension of the federal program by various groups originally opposed to coverage, such as the American Council on Education, indicates that application of federal insurance to the colleges is not too far in the future.

If, and when, coverage does become effective, it is hoped that the law will offer more nearly adequate benefits than it now does. Benefits currently attached to the federal program are definitely inadequate to meet the needs of the average faculty member. Not only must the size of the benefits be increased to afford adequate old-age and survivorship protection but new types of benefits must be added, particularly in the realm of insurance protection against disability during the normal work-life span.

While, at the current writing, legislation of the latter nature has not been introduced, it is anticipated that a bill, or bills, incorporating such an insurance program will be submitted. Bills that have been filed and that are important to the subject of this article include those of Representatives Beckworth (H.R. 145), Mack (H.R. 258), Celler (H.R. 363), Kean (H.R. 447), Keogh (H.R. 460), and Reed (H.R. 536).

# Management of **ENDOWMENT FUNDS**

*is heavy responsibility for college treasurer and investment committee*

ENDOWMENT FUNDS OF COLLEGES, AS well as other special funds, are usually gifts in the form of either cash or securities. It is the intention of the donor that special funds be used for specific purposes. In the case of special funds, the income is designated for particular uses or, in certain cases, the principal is to be used for a special purpose.

In the case of endowment funds, the use of the income usually is not specified but is left to the discretion of the finance officers of the college. These funds are actually, but not necessarily legally, left in trust for the benefit of certain beneficiaries, and so we may consider that the college treasurer and the various members of the investment committee are, in a true sense, trustees, and that their funds should be handled exactly as prudent trustees would handle them.

## **IMPORTANT RESPONSIBILITY**

The management of these funds is a heavy responsibility for the college treasurer and for his investment committee. Relatively, the small endowment funds of a small college are just as important to that college as the large funds of the major institutions are to them. Consequently, it is only logical that the management of the smaller funds receive just as much attention on a relative basis as does that of the larger funds. Colleges vary widely in their manner of handling their endowment and special funds.

Colleges can be broadly divided into two groups: (1) those that are in a position to maintain their own staffs and purchase the various statistical facilities needed to do a good job, and (2) the smaller colleges that have smaller incomes and are not justified in paying for a staff and the various statistical services that are vital in investment management.

First of many investment problems

From a paper presented before the Southern Association of College and University Business Officers, 1948.

## **MALCOLM F. WILLOUGHBY**

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is that of personnel. A college treasurer works in a specialized field that is broadly concerned with the entire financial responsibility of the college. Investment in securities is only a part of his duties. In only rare instances is the treasurer a man who has specialized in the field of investments. Yet, persons who have spent their lives studying investments and are the keenest in the field readily agree that no one can possibly know all about investment securities.

Investment committees are usually made up of leading business or professional men in the general locality of the college who have been successful in their own lines of business. Usually, these men are still active and devoting their primary efforts to their own work. The committees ordinarily consist of a banker or two, a successful businessman, a lawyer, or a prominent industrialist. In most cases they are not investment specialists. Often they employ their own investment counsel for their personal funds. They devote careful attention to their college responsibilities, but their principal efforts are in other lines.

There are many pitfalls in the course of handling investments; among them is lack of sufficient information. Most small colleges are at distances from financial centers and, consequently, not only feel out of touch but actually are out of touch. Action is often taken without due study.

Another pitfall is the purchase of a security recommended by the broker or personal friends when funds are available without giving due consideration to the position of the business cycle, stock market levels, and the general investment plan of the college. Just buying something that has been recommended because funds are available can be very costly.

In addition, particularly with those colleges having moderate endowment funds, is a desire for too much income or, in other words, making the horse carry an impossible load. One might say that the greatest underlying factor in poor investment performance is greed of one form or another.

A donor's feelings can be a factor. Often, when a security has been given a college there is a feeling that the security should not be disturbed because of possibly hurting the donor's feelings. In nineteen cases out of twenty, such a situation can be handled tactfully and the sale of a dubious security effected without unpleasant repercussions. Only recently I observed a college account which, during the last six months, has declined in value 5 per cent. Of this decline, 84 per cent was occasioned by weakness in one large holding that has remained undisturbed because of this feeling about the donor.

## **HAPPY MEDIUM**

Sometimes there is a tendency to be too conservative in the type of securities owned. Many trust companies were badly burned in 1929 and 1930. This brought about a swing toward ultraconservatism with the result that funds were not put to work effectively. There is a happy medium.

Another factor contributing to poor performance is lack of a long-term goal and the absence of a long-term plan. Few businesses can be successful without long-range planning and a sound general policy.

We all know that one can purchase the "best security on the board" at the wrong time with disastrous results. A case in point occurred in 1929 when an investor made known his requirements and wanted to purchase the best stock under the circumstances. Fundamentally, it was decided that American Telephone was the best for the purpose, but the investor was warned not to buy it at that time, when it was selling at \$310. However, he wanted



his money working, and he invested \$30,000 in that stock. Had he been patient, he could have purchased with the same amount of money, three years later, about four times as many shares and could have received from that point forward about four times the dividends that he actually realized.

Careful study of fundamentals and market technicalities aids tremendously in making it possible to buy in lower areas and sell in upper areas and to conserve capital during major declines. If that can be done, the value of timing is tremendous.

Of major importance in investment planning are a definite goal and a sound long-term policy designed to achieve that goal. Such planning is definitely vital, especially with college funds where the treasurer and investment committee are really trustees for the donors and beneficiaries.

#### REASONABLE REQUIREMENTS

Such planning must be in tune with the objectives of the fund in question. These objectives vary widely as among different colleges, depending upon financial requirements. One important factor in this is that the requirements should be reasonable. There is a matter of very delicate balance between capital risks and income requirements which can be safely met. Objectives and the means of reaching them on a sound investment basis require careful thought and planning.

In the selection of securities, there are two inseparable factors. First are the fundamentals, which we might call the trees, and second, the technical and basic considerations, which we might term the forest. Both must be given adequate attention.

Fundamentals concern the study of the industry and the company in which investment is proposed. Prospects for the industry and company must be carefully considered. It is well to consider whether the product or service of the company in question is an economic necessity. If so, it is a favorable factor for conservative investment. There is much more risk in specialties that are not economically necessary. For instance, we would consider the automobile an economic necessity in this day and age, but a cigaret lighter would hardly come under that classification.

The company's competitive position should be determined and, if unfavorable, it would be best to look in other fields. The capitalization of the com-

pany should be analyzed to learn whether it is too heavy or entirely proper. In the case of bonds, the asset protection should be determined; in the case of stock, the equity per share. The financial condition should be strong and working capital adequate for all expected needs of the business.

Earnings are extremely important. If they have been erratic in the past, they are likely to be erratic in the future and, consequently, undependable. Steady earnings over a long period of years contribute to investment quality and are desirable in conservative investment.

The dividend record is also important. Is the company habitually paying out a large proportion of earnings and dividends and setting up inadequate reserves? Are earnings being plowed back into the business, thus increasing asset value and working for the future? For adequate protection, earnings should be well over twice the amount needed to meet utility and rail bond interest, and in the case of industrials, they should be an even greater amount.

#### TEST OF MANAGEMENT

An intangible and difficult thing to determine is management. Personal acquaintance is likely to contribute to bias or prejudice. About the best test of management is the past record as determined by balance sheet and earnings statements and knowledge of the product, as well as opinion within the industry. Some industries are subject to political influences. Sugar com-



panies, transit companies, and certain utilities are examples. Often this is an adverse factor.

The time for buying a stock is of extreme importance. Let us recall what happened on the last bull market in stocks. The low was reached on April 28, 1942, with the Dow-Jones Industrial Stock Average at 92.92. From then on, with little interruption, prices rose generally until May 29, 1946,

when that average was 212.50. There was plenty of opportunity for growth in principal during that period. However, when prices are low investors fear to purchase and when they are high they are caught up with enthusiasms related to good business and are inclined to buy. Actually, when prices are low, stocks can be purchased with the least possible risk; when prices are high, risks are large.

#### NOT ALWAYS THE CASE

There is a tendency to feel that if earnings go up, stock prices must go up also. It sometimes happens that way, but it is not consistently so. The cycle almost always progresses along orthodox lines. In 1941 we had a tremendous industrial activity resulting from national defense, and the increase in corporate earnings was enormous. Nevertheless, stock prices declined until a low was reached in April 1942. The year 1942 was one of large earnings, but stock prices were low most of the year. Because of the excess profit taxes and various other factors, there was a gradual decline in earnings, even though they remained large during the next few years. Yet, the market reached its top in 1946.

That earnings and stock prices cannot be too closely related is evident from the classic example of American Locomotive common stock which, in 1942, sold at 61¼ with earnings at about \$3.67. In 1946 the same stock, on earnings of \$3.50, sold at 41¾.

Stock prices are made largely as a result of the psychology of the investing public. The state of that psychology is reflected naturally in the prices and trends evident in the stock market. Therefore, the market itself is probably the best gauge of the psychological factor, and technical study of it is likely to show just about how people are thinking for the intermediate and the long term. Therefore, such technical studies are extremely important in determining basic investment policy.

Assuming that proper study of these various factors has been made and a long-term policy determined upon, with due regard to the investment objective, there comes the matter of practical application. Obviously, if one can take advantage of cyclical swings in stock values, the result is constructive. It is the best means of obtaining long-term growth of capital and of increasing income.

A properly constituted endowment fund should have investments in high-



grade bonds and common stocks. The high-grade bonds, and under certain circumstances high-grade preferred stocks, provide a defensive fund that helps to bolster values during broad declines since securities of that type habitually decline less than common stocks. However, common stocks are the best means for gaining capital appreciation. Nothing is gained by holding the same proportion of such types of securities through a bull market and then through a bear market. Definite advantage can be had by having the major portion of the fund in common stocks during bull markets and in defensive securities during bear markets.

#### SHIFTS IN SECURITIES

This means that, according to the position in the cycle, there should be shifts of large proportions of one type of security to the other, and the question is when these shifts should be made and what change there should be in proportions.

Operating an investment account on this basis allows a certain flexibility in order better to meet the demands of the account. The average conservative account, however, might have as much as 80 per cent in common stocks during the low cyclical areas and only 20 per cent in common stocks when markets are high. It is interesting that, as of June 30, 1945, the following percentages of endowment fund portfolios were given over to common stocks by the following colleges.

	Per Cent
Brown University .....	47.9
California (University of) .....	21.6
Dartmouth College .....	43.4
Harvard University .....	35.9
Johns Hopkins University .....	33.6
Mass. Inst. of Technology .....	38.0
Princeton University .....	36.1
Radcliffe College .....	36.6
Rochester (University of) .....	42.5
Smith College .....	31.4
Wellesley College .....	36.9
Williams College .....	36.6
Yale University .....	34.9

In 1947 I went over a college endowment list that was only 9.7 per cent defensive. Obviously, there was an income problem, and the average yield was 5.28 per cent. However, an account in that condition is subject to drastic principal shrinkages which will probably far more than offset any advantage received from the liberal income.

This leads naturally to formula plans that have been placed in effect

by various colleges. They have been used to good advantage. They are more or less fixed policies in the matter of timing, and in these cases fairly good results have been obtained.

#### THE YALE PLAN

The Yale Plan has been followed at Yale since 1938. Briefly, it is a matter of a variable stock-bond ratio based upon changes in value of the account itself. For instance, a normal balance is, according to this plan, 30 per cent



in stocks and 70 per cent in bonds, cash or equivalent. In a rising market, stocks will increase in value and their proportion also will rise. When that proportion has risen to 40 per cent, enough stocks are sold to bring the value of the stock section back to 35 per cent. No sales are made before this stock value reaches 40 per cent. In a declining market, no purchases are made until common stocks have dropped to 20 per cent of the total value, and then enough stocks are purchased to raise the proportion to 25 per cent. Should the value again drop to 20 per cent, additional purchases would be made to bring the percentage to 25 per cent.

Of course, in this plan broad market fluctuations are needed and, while the results have been favorable, they have not been spectacular.

Another well known method is the Vassar Plan, also adopted in 1938, with part of the endowment funds of that college. This, also, is a variable stock-bond ratio, but this is based upon Dow-Jones Industrial Stock Average. A median, or normal level, is determined by the finance committee, guided by a ten-year average of the Dow-Jones Industrial Stock Average, but the committee is not restricted to that average. It is used merely as a guide, and the median is arbitrarily determined.

When the Dow-Jones Industrial Average is at this median, the proportions in the fund are 50 per cent stocks

and 50 per cent bonds. In a broad decline, additional stocks are purchased in equal amounts on successive 10 per cent declines in the average, and after three such purchases, the fund is all in stocks. When the average rises 10 per cent above the median, sales are made in three equal amounts on successive 10 per cent increases in the average, and all stocks are sold after the third operation. Usually, stocks are sold right across the list. The operation of this plan has been quite successful and somewhat better than that of the Yale Plan.

Another theory is based on a cyclical average of the Dow-Jones Industrial Average. This is a good gauge of "normal" in any cycle. The average changes every month, and the position in the stock market cycle is determined at any time by the percentage of the average above or below this "normal." Since cyclical swings above and below this normal follow a fairly definite pattern over the years, it is a helpful guide in determining the upper and lower areas of the cycle and thus is helpful in determining the selling and buying points.

In using this theory, moderate sales are made in two steps above normal and a larger operation is carried out as the third step. This is reversed when below normal, and purchasing is in order. Ordinarily, under this plan stocks and bonds are never completely sold out, but near the top of the cycle common stocks may amount to only 20 per cent of the total and at the bottom of the cycle they may be as much as 75 per cent of the fund. If properly executed, this can be an extremely profitable method.

#### MOST IMPORTANT ELEMENTS

In conclusion, we may summarize the most important elements in endowment fund investment. First, we should have a clear-cut objective based upon reasonable requirements. Next, there should be a definite plan, formula or otherwise, for meeting the objective over the longer term.

There should be careful study of fundamentals regarding any stock or bond that is considered for investment, and this should be supplemented by study of basic technicalities in order to determine, as nearly as possible, proper timing. Best results over the longer term probably will be obtained through application of the theory of balance with shifting proportions depending upon basic studies.

# How Brown saved money on **TELEPHONE BILLS**

**DONALD M. CLAYTON**

Assistant to the Business Manager  
Brown University

WHEN YOU MAIL A LETTER YOU automatically attach 3 cents' postage. This rate is established by law and is taken for granted. Frequently, when you receive a bill from a public utility, be it for gas, electricity, water or telephone, you assume that its amount cannot be questioned. However, many institutions for some time have been investigating cheaper methods of buying gas, electricity or water and have sometimes called in outside engineers who specialize in discovering methods of reducing these charges.

In April 1948 the Rhode Island Public Utility Commission allowed the New England Telephone and Telegraph Company to increase its rates within the state, and Brown University's telephone expense increased 16 per cent in total and up to 64 per cent on rental of some switchboard equipment. This focused attention on our telephone bills, and we instituted a system of auditing telephone expenses, which amounted to \$50,000 a year, including the salaries of our switchboard operators.

Our first step was to make an equipment inventory showing the basis of monthly charges to each terminal from the switchboard. This was accomplished with the aid of service engineers from the local office of the telephone company whom we found to be cooperative in itemizing charges and explaining rate schedules. In working on this survey we discovered certain variations in billing for services. When we discussed them with the telephone company, it was readily admitted that a few errors had crept in over the years, and the company offered to correct its billings and make restitution for past overcharges, some of which went back several years. We understand the telephone company

usually schedules periodic physical inventories of P.B.X. systems to ensure correct charges for equipment in use. However, since the beginning of the war, it had been unable to resume this activity until recently.

Here are a few examples of billing variations discovered in our audit. In one of our buildings there are a dozen telephones. Seven of these, installed in 1927, have no circuit charges. But circuit charges of \$1 a month each were erroneously billed to the five phones installed later. In another building we have 11 telephones, on three of which we had been paying terminal loop charges of \$6.50 per month each for two years. Apparently these three should have been charged no more than the other eight, for the refund to us was \$532.

No one had questioned the telephones in the president's home, and an overcharge of \$9 per year was discovered there. This was because of a clerical error made 11 years ago, and the refund to us was nearly \$100.

While the amounts are important, it is perhaps only fair to say that they represent a minute part of the estimated several hundred thousand dollars of billing in the same period. Errors of this type had never been discovered because telephone bills ordinarily show merely the total amount owed. However, we found it was possible to obtain an itemized bill, although this is not the regular practice.

In past years at Brown all telephone bills had been charged to a general telephone expense account on the university accounting system. It was decided to allocate to each department its share of the total expense. This included an exact charge for the department's equipment rental, plus an overhead or loading charge for the rental of central switchboard equipment, salaries of operators, charges for measured service, and supplies used.

This overhead was apportioned equally to each telephone instrument regardless of whether it was used a great deal or only infrequently.

Our system is automatic, not manual; therefore, it would have been difficult to keep records of the number of incoming and outgoing calls to each instrument in order to allocate the overhead in proportion to use. When department chairmen were advised of the cost of their telephone service, there was a tendency to reduce the amount of telephone equipment in order to free a part of their budget for other purposes.

A third step was to advise telephone users that business telephone service is not unlimited, but that each outgoing call is metered. The university is charged 5.18 cents (which includes 15 per cent federal excise tax) for each of the first 2000 five-minute calls per month, and after that 4.6 cents, including tax, for each five-minute unit of conversation. Although these facts are undoubtedly known to business managers, the information came as a shocking surprise to many members of our faculty and, I believe, has had the effect of making them a little more conservative on outside calls.

In the course of our study of telephone uses and costs, we came to the point at which we felt the need of independent engineering counsel. Fortunately, we were able to locate a man of long experience in the telephone field who is familiar with published tariffs and engineering possibilities. He provided us with a thorough analysis of services and recommendations of installation and operating changes. The cost of his service is half of the first year's savings realized as a result of our adoption of his recommendations.

After reviewing the recommendations of this engineer, we acted immediately upon some and presented others to an engineer of the telephone

From an address before the Eastern Association of College and University Business Officers, 1948.



company. In the end, we made our own decisions with the result that so far some substantial recurring savings are being realized.

We are planning to make use of a professional answering service during the night hours from midnight until 8 a.m. and perhaps on week ends, also. After midnight we usually have about 20 incoming calls per night. We should no longer need our night operator, for the answering service would route all emergency calls to their proper destination. The estimated saving to Brown is \$3500 annually in operators' salaries, while the fee for the answering service is only \$300 per year, plus \$90 in circuit charges. This service will be instituted on an experimental basis to see whether it is satisfactory.

A study of the tariffs on file with the State Public Utility Commission revealed to us some more advantageous rates for certain services than we previously had been enjoying. For example, a direct outside line used only for incoming calls may be rented at \$3 per month instead of the usual business rate of \$6 per month, including 80 free calls which would not be used. The telephone company will allow credits for wrong numbers reached, if this is requested. Naturally, in dialing 20,000 calls a month, we make some misdials.

We found it advisable to request from the telephone company copies of meter readings of trunk lines from time to time. The company records these for billing purposes, but they are not itemized on the invoices. After examining the readings, we removed three trunk lines without perceptible loss of prompt service. In the next few years as enrollment falls off, the number of calls from our switchboard will presumably decrease, so we plan to watch for opportunities to remove other trunk lines and equipment.

Studies of the comparative values of manual and automatic equipment should be made by telephone company engineers and university employees who are familiar with conditions peculiar to the campus. Telephone companies have recommended to many colleges that they replace manual switchboards with automatic dial equipment, and at Brown this change was made ten years ago. According to *Telephone Topics*, many campus telephones at Harvard, Cornell, Boston University, and Holy Cross were changed to dial during 1948. By



There is no saving in changing to automatic dialing if a fairly large percentage of calls is made to off-campus connections.

contrast, the University of Pennsylvania made a thorough survey and, in line with the recommendations of telephone company engineers, decided to stay on the manual basis.

Rental of dial automatic switching equipment is more expensive than the rental of manual equipment. There is some question about the saving in operators' salaries at Brown being as great as the additional expense for the rental of automatic switching equipment. In our experience, if a fairly large percentage of calls is made to off-campus connections, as opposed to calls on the campus, there is no saving in changing to automatic dialing.

Like all other members of the American Telephone and Telegraph system, the New England Telephone and Telegraph Company is proud of its record of service. Its advertising reminds us frequently that its ambition is to render the "best possible service at the lowest possible cost." The telephone company provides free instruction for our operators and illustrated lectures for our office personnel. Surveys of equipment needs are efficiently conducted when requested. The company cooperates in our auditing of telephone bills, which our experience indicates is just as necessary as the verification of other invoices rendered to the college for goods and services.

One final thought—many telephone companies recognize only two general forms of rate schedules, residential and business. Residential rates are low,

while business users bear a heavy part of the operating costs of the telephone system. Filed tariffs specify that services may be charged for at business rates if the services are used for business purposes or if they are furnished at a business location. They also state that these identical services shall be charged for at residential rates if they are used for social or domestic purposes, and this description seems to apply to telephone services in college residence halls.

But should nonprofit institutions be subject to the same rates as business users? Colleges, like hospitals, Y.M.C.A.'s and other charitable organizations, are not engaged in "business," in the generally accepted use of the word. When this is recognized, colleges receive certain tax exemptions and purchasing advantages. In some states nonprofit institutions, as well as municipalities, formerly enjoyed substantial discounts from regular business telephone rates. But such rates have largely been abolished, and it has been pointed out to us by telephone company officers that the granting of advantageous rates to some would possibly result in spreading a portion of the institutions' operating costs to other customers.

Unless the friends of colleges and other nonprofit organizations request the consideration of public utilities, the special rates available to public service and charitable organizations will gradually disappear.



## Measuring effectiveness of residence hall **COUNSELING**

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QUESTIONNAIRES SENT TO 500 UN-selected American colleges and universities indicate that probably four-fifths of the institutions of higher learning in this country employ residence hall counseling programs.\* Almost half of the schools using such a program employ graduate and/or undergraduate students as counselors.

While counseling programs vary from campus to campus, the philosophy in general behind the programs is that the school is responsible for more than food and body shelter, class and laboratory instruction; the school is responsible also for those aspects of the lives of the students not otherwise touched by the institution. At the University of Illinois we call these things "the social-educational aspects" of university living.

Those responsible for residence hall counseling programs often wish for some means of measuring the effectiveness—or worth—of the programs, but usually the attempts at measuring such intangibles as worth and effectiveness are so frustrating that the business of measuring is omitted entirely.

From the questionnaires it would appear that perhaps less than half a dozen schools have any method of evaluation so far as their counseling programs are concerned. One college dean reports, "This is the most difficult part of the residence hall counseling program." Another says, "Our program is tested only as the life in the world tests it." Still another comments, "The better the counseling the fewer the problems needing the attention of the personnel office."

Those responsible for the program at the University of Illinois use for such measurement two devices that are

felt to be useful and to serve a definite purpose. The first of these yardsticks for measuring the worth of the residence hall counseling program is a questionnaire filled out by the student residents themselves at the end of each semester. This questionnaire evaluates both the counselors and the program as a whole through the eyes of those with whom the counselors have been working. As the questionnaires are handed in anonymously, residents are free to comment and to mark the evaluation sheets as they see fit.

### **EVALUATION SHEET HELPFUL**

Although this evaluation sheet is not to be considered perfect by any means, it is felt to be valuable for several reasons.

1. It serves as a basis of comparison of attitudes among residents of the various housing units. If the questionnaires, as returned from one unit, are decidedly less complimentary than those returned from another, the staff may need to be strengthened there, either by a change in the personnel or by more intensive supervision and training.

2. The questionnaires indicate the areas in which the counselors are strongest and weakest and in what direction more supervision is needed.

3. The last few lines of the sheet serve as a safety valve through which the few disgruntled residents may blow off steam—a cathartic experience of which students, too many times, are unable to avail themselves.

Often those responsible for such a program also wish for a yardstick by which they themselves may measure the counselors and their work. At Illinois the head residents, head counselors, and the supervisor of counseling, at the end of the second semester, appraise in writing the work of the in-

dividual counselors as performed during the year just completed, with a view toward either retaining them on the staff or dispensing with their services. Personnel records kept on each counselor throughout the year simplify the matter of forming these final judgments. Active personnel records also tend to make the counselors, the head residents and head counselors, and the supervisor of counseling more aware of the various phases of the counselors' work, their strong points and weaknesses, and provide an opportunity for talking over these things with the counselors.

More specifically, it could be pointed out that the purposes of counselor appraisal are: (1) to provide an inventory of the skills and abilities of the counselors so that an effective program of upgrading can be carried out; (2) to give superior counselors recognition for their efforts and to establish a means of determining the steps necessary for helping all counselors become more effective; (3) to show that pay changes, promotions and transfers are based on demonstrated ability and merit rather than on favoritism or influence; (4) to help increase over-all efficiency.

All counselors are appraised once each month by the head counselor or head resident and by the supervisor of counseling. These persons discuss with the counselor his work in general, his specific strong and weak points, and make suggestions that may be helpful.

The first step in the counselor appraisal procedure is filling in the appraisal form, a process that cannot be done in a hurry or reduced to a formula; it can be done only by analyzing critically each counselor's performance, and entries can be made only as a result of careful study. The appraisal form contains factors on which each

\* "Get Set for Residence Hall Counseling," *College and University Business* 5:24 (July) 1948.

counselor is rated—factors intended to represent comprehensive qualities that each individual counselor possesses in varying degrees. Each quality is marked: excellent—10, 9; good—8, 7, 6; fair—5, 4, 3; poor—2, 1.

To facilitate the procedure the following suggestions are offered to those making the appraisal: (1) concentrate attention on only a few counselors each week; (2) make tentative appraisals in your mind as you observe the counselors from day to day; (3) go over the strong points and weak points with each counselor (try to get the counselor to feel that by such frankness you are making him stronger in that he will know where to concentrate his activities for self-improvement); (4) support your comments and criticisms with facts; (5) encourage the counselor to suggest a plan for improvement. (Be of help to the counselor by

working with him on some specific way of eliminating the weak points.)

Rating factors considered in the counselor appraisal include:

*Popularity.* Does he have the approval of his fellow residents? Is he sought out by others? Does he mix well with the residents or is he more or less a lone wolf?

*Leadership.* Do residents look to him for leadership because of his natural ability? Does he lead and others follow, not because of domination but because of qualities of leadership?

*Initiative.* Does he think along original lines? Does he find new ways of doing the job? Does he suggest ways and means of improving the counseling program and its relations with the residents?

*Dependability.* Is he reliable and trustworthy? Does he apply himself to the job and work regularly rather than

in spurts? Does he require a minimum of supervision?

*Cooperation.* Is he a good team worker? Does he work well with his fellow counselors, the head resident, and house officers?

*Ability to Learn.* Does he require little or much instruction? Does he grasp explanations and retain this knowledge? Is he willing to learn and does he adapt himself to new conditions?

*Grasp of Program.* Does he understand the aims of the residence hall program and how it fits into the overall university picture? Does he have ideas as to how the aims of the program may be furthered?

*Time on Job.* Is he giving value for value received? Is he averaging two hours a day? Does he contact his residents regularly and make himself available to them daily?

*Seriousness Toward Job.* Does he have a real concern for all phases of the program? Is he earnest and thoughtful as far as his work is concerned? Does he have concern for all phases of the lives of the residents? Does he talk over his work with the head resident and with the other counselors?

*Amenability to Suggestions.* Does he take suggestions readily? Does he consider the opinions of others when they affect him or his work? Does he put suggestions into effect if a change for the better is involved?

*Quick Follow-Through.* If a job is given does he get it done quickly? Does he have to be reminded? Does he give quick service to the residents?

*Emotional Stability.* Is he steady and firm? Is he easily upset? Are his moods changeable from day to day?

Such appraisal has a desirable effect both on the counselors and on those responsible for the residence hall counseling program. It keeps the counselors alert. They know on what points they are being judged, and they feel that those to whom they report are actively interested in their progress in the program. Those heading the program in the various halls feel a definite responsibility to the counselors working under their supervision.

To make such an appraisal it is necessary to maintain an active interest in each individual counselor.

In general, we in the residence hall counseling program at the University of Illinois feel a much livelier interest in all phases of the work since the inauguration of the appraisal records. Other schools may find them helpful.

Dear Resident:	Date _____ 19 ____
The counselors of this unit are naturally interested in improving the counseling program -- giving better service of the type and kind for which you see a need.	
This questionnaire is specifically designed to give the counseling staff a candid group picture of the effectiveness of its program.	
1. Do you know your counselors name?	Yes _____ No _____
2. Do you know where he bunks?	Yes _____ No _____
3. Have you ever had occasion to use the services of the counseling program? (Including Head Resident and Counselors Bulletin Board)	Yes _____ No _____
	From your own counselor?      From any other Counselor?
Educational _____	_____
Emotional _____	_____
Vocational _____	_____
Social _____	_____
4. Were you satisfied with the service received? (Check one)	
Very much satisfied _____	
Satisfied _____	
About 50-50 _____	
Dissatisfied _____	
Very much Dissatisfied _____	
If less than satisfied, please comment _____	
5. If you know your counselor, will you please rate him on the following points? (Check him fairly in the chart below)	
	Satisfactory      Unsatisfactory      Undecided
A. Understanding: (Appreciation of the problem)	
B. Cooperation: (Desire to be of service)	
C. Friendliness: (Personality)	
D. Enthusiasm: (Interest in work)	
E. Promptness: (Quick service)	
6. What criticism, suggestion, do you have about our system? _____ _____ _____	
(Please do not sign your own name or place the counselor's name on this sheet Return to the office upon completion)	

The questionnaires indicate the areas in which counselors are weakest and the strongest, and in what direction more supervision is needed.



# CENTRALIZED PURCHASING AND CENTRAL STORES

CENTRAL STORES GOES ALONG NATURALLY with centralized purchasing. A college or university purchasing agent early becomes conscious that he is buying the same materials on various occasions for two or more departments of the institution. One of his first accomplishments is likely to be concerned with the pooling of those identical or similar requirements from various departments into combined orders or "requirements contracts" so as to take advantage of quantity price brackets and other purchasing economies.

That process of combining and pooling is greatly facilitated if there is a central stockroom in which to deposit such materials and from which to issue them as needed.

Central storing is necessary to adequate "materials accounting." The business office long has been sold on sound accounting practices as regards the *funds* for which the governing board is held responsible. It is only a short step from accounting for the cash and securities to the concept of similar close accountability for the *materials* for which a portion of those funds is being spent. The alternative to a central stores department consists of innumerable little stockrooms scattered about the campus, each with its quota of spoilage and obsolescence.

The interest and attention of the other departments are concerned primarily with teaching, with research, with maintenance, and with construction. If the materials accountability is to be dispersed and dissipated among them, the control of those materials waiting to be used is likely to be quite sketchy.

It is difficult to understand how an institution of any size can operate effectively and economically without a stores department. A stores department is more than a warehouse in which a miscellaneous mass of supplies is dumped in the vague expectation that some day some of the items may be needed. Central storing is a scientific merchandising enterprise with up-to-the-minute records to show *how much* of *what* is likely to be needed *when*. It is a distributing center and

## LESLIE F. ROBBINS

Purchasing Agent  
University of Colorado

a revolving account, ready at all times to supply the physical wherewithal to enable the institution to operate like a well oiled machine.

Central stores is a facility by which to purchase the total volume of an item used by the school and to distribute the cost equitably among the respective budgetary divisions which finally benefit by those materials. It is a *purchasing tool* that makes possible more effective buying by affording ready purchasing information based on actual experience. It is an important factor in the continuing effort to standardize as between the many preferences and prejudices running rampant on most college campuses that tend to plague the purchasing agent who is trying to husband the hard-to-come-by dollars.

In general, the stores department with one or more stockrooms should be under the general supervision of the purchasing agent unless the institution is large enough to justify a separate supervisor of stores. Even then, that supervisor and the purchasing agent should work together as a team. Because of its value in pur-



chasing, it is my opinion that the stores record should be kept in the purchasing department and the stores record clerk be a member of the purchasing department staff.

The visible evidence of control of stores inventory is the stock card file. The goods on the shelves are attested to by the figure in the on-hand column of the perpetual inventory file of stock cards. The arrival of new stock is attended by receipts entries, and the disbursement of stock brings issues entries on the respective cards.

Certain policies must be established. One is whether to mark up the issuing price from the invoice cost to cover overhead. Some institutions prefer to absorb this overhead by a budgetary appropriation and then to distribute the goods at the net invoice cost, plus freight. Another policy matter relates to the determination of which price to use in issuing stock remaining on hand after new stock, costing differently, has arrived. Probably the last-in last-out policy is most generally used.

## CLASSES OF STORES ITEMS

Usually the earliest class of goods to engage the attention in central storing is janitors' supplies and general maintenance items. Next may be office supplies, stationery and printed forms.

If the institution has its own force of skilled trades—carpenters, painters, plumbers, steamfitters, electricians, sheet metal workers, and the like—it will be necessary to keep stocks of supplies and materials that each of them uses, both for regular and emergency operations. Sometimes the central stockroom can be located in the shops building near where these trades have their workbenches, but, if not, it still may be desirable and feasible to maintain central control over those decentralized stocks.

Another category of material that is subject to central control is furniture, at least office furniture. In some institutions the common needs for office and classroom furniture are provided out of a separate furniture account so that furniture can be shifted freely from place to place as the needs change. In others the several departments are required to requisition their furniture needs as depart-



## GO HAND IN HAND

mental equipment to be paid for out of departmental appropriations and are therefore considered to "own" their furniture. In either case, central stores for both new and used furniture is in the picture.

A central stockroom is the natural repository for equipment that can be rented or lent to various departments that have a limited or temporary need for such items. This category might include such things as typewriters, calculators, projectors and microscopes. The rental procedure is one way to accomplish the sharing of equipment, through avoiding duplication of expensive apparatus, some of which otherwise will be standing idle a great part of the time.

The degree of centralization of stores items on one campus may be subject to varying conditions. It may not be feasible to bring special stores items in with general stores. Stores of chemicals, for instance, have a special relation to the chemistry department or the chemical engineering department, just as pharmaceuticals have to the pharmacy school, and photographic supplies to the photo studio.

Storage of some items involves special facilities or requires extra safeguards; among these, stamps and grain alcohol. Fire insurance codes may limit the amounts or kinds of oils that may be stored in buildings of a certain class.

It may be expedient to adopt a policy to the effect that, in general, only items that are required by two or more departments will be stocked in the general stores department. It might also be feasible to use one or more of the special stockrooms as the central source for certain items instead of carrying duplicate stocks of those items in the general stockroom. Such would be the case if the photographic chemicals were kept in the chemistry stockroom to supply all darkrooms or the carbon tetrachloride for the fire extinguishers was kept there.

Special problems are encountered in such fields as lumber stock for the carpenter shop, and sheet metal stock for

the tinner. When it is not practicable to have such stocks kept in the general stockroom, it might still be well to have the records centralized and kept current by the stores record clerk



from information derived from daily charge slips made out by the workmen.

The perpetual inventory of stores is the reservoir of information necessary to adequate control. The stock card must show all of the essential information about the material, when received, what source, order number, cost, transportation, unit cost, and issuing price. It must record the issues from stock and the amount remaining on hand at the last posting. All entries should be posted daily. Postings of receipts are taken from invoices after the invoices have been checked against the count of incoming goods.

### INDEX FILE PREFERRED

Issues are posted from the charge-out tickets that are written up by the stores clerks as the goods are issued to various departments and accounts. Issues of any fast moving items can be accumulated and the accumulation posted in one entry in order to avoid filling up the record card too fast. The stock cards are usually filed alphabetically within the commodity group classification. Some sort of visible index file is usually preferred.

Charge-out tickets are priced daily and extended and there can be a periodic transfer in the accounting department crediting the stores department and charging the respective

budgetary accounts which received the goods. Duplicates of the charge-out tickets support the accounting entry.

Once a year, at least, the perpetual inventory of stock on hand is checked against the actual count of goods on the shelves, and the record is adjusted. An error of any size should be investigated; barring theft, any considerable margin of discrepancy will indicate the need for greater accuracy.

The minimum staff for a general stores department is one stores clerk, who also keeps the stock records. Most universities will have enough general stores to require at least one full-time stock record clerk and one or more stock clerks for each stockroom. Branch or special stockrooms may be open only part time.

When there seems to be a need for increasing the staff because of increasing work load, it might be well to examine the factors in the situation realistically. The advantages of centralization differ in different commodity groups. Since complete centralization is seldom feasible, there may be areas in which the advantages should be compared with the cost. It may be possible to modify the procedure to obviate or postpone the increase if, say, the automotive oils and gas pumps can be moved to the garage, or standard minimum packages be established to reduce the number of small issues.

### BOOKSTORE ADAPTABLE

If the institution has a college owned bookstore and if the general stores requirements consist mainly of office supplies, it is sometimes feasible to make the bookstore the central stores department out of which to supply the departments rather than set up a separate stores department.

There may be several possible variations of the way to handle central storing, and the one best adapted to the current situation and adaptable to anticipated future changes should be worked out.

Certain principal objectives should be kept uppermost: (1) to have supplies available when they are needed; (2) to promote standardization tending to concentrate on the least practicable number of grades, varieties, sizes and colors; (3) to promote more effective buying by furnishing records of previous use, enabling the buyer to obtain the best price for the appropriate quality, and (4) effectively to distribute the goods to the users and equitably allocate the cost.

# Employee Education — a Must in Employee Relations

**HAROLD A. THOMSON**

Personnel Director  
University of Colorado

THE WHOLE REALM OF GOOD employee relations encompasses a number of well known and sound administrative practices and principles. This multifaceted problem with which all university and college personnel departments have to deal consists mainly of the following:

1. Selecting new employees by numerous methods of interviewing, testing and physical examination.

2. Making compensation standards fair and up to date through the use of various position classification systems and their accompanying salary or pay plans.

3. Arranging equitable employee benefits, such as vacations and holidays, assorted types of insurance, sick leave, retirement plans, health service, and reasonable working hour schedules.

4. Keeping staff members well informed by means of regular employee publications, handbooks and statements of policies.

5. Organizing some sort of representative bodies wherein employees individually or collectively may be represented in discussions for the improvement of all related employee matters.

6. Stressing the individual's improvement and his increasing worth to the institution through general and specific education and supervision.

7. Organizing a personnel department sufficient in size and scope to coordinate, interpret and recommend changes in the over-all personnel program.

It is my purpose in this brief article to discuss an aspect of only one of these major functions—that of individual improvement by means of educational benefits. In a very practical way an academic institution, such as

a university or a college, is in a unique and advantageous position in being able to afford educational benefits for its employees. Through the extensive use of such a benefit, an employee can make himself of ever increasing worth to his employer, can become more efficient in his work, can increase his scope of knowledge and understanding and can become a better citizen at large.

As one among several possibilities, about a year ago at the University of Colorado a plan was developed whereby nonacademic employees are privileged to take certain university academic courses at greatly reduced tuition rates. The cost to the employee has been set at a flat \$10 per course, which is approximately one-third the normal tuition charge, and is the same fee a faculty member pays for taking academic work in similar fashion.

The question may arise as to why employees should not be allowed this privilege at no cost. There are several reasons. The University of Colorado, like other institutions, is finding academic facilities and space at a premium. If courses were free, many more employees would take them and overflow already crowded facilities, which would deter from the effectiveness of classes for regular students. By charging even a nominal fee to the employee, he has a personal stake in the venture and takes it more seriously.

The details of the plan follow a definite pattern. The employee must have the written permission of his department head to register for the course, the number of hours not to exceed one course. (For example, one three-hour course, one four-hour course, or one five-hour course; not

two courses whose combined hours might be four or five hours of credit.) The course must be related to the work the employee is now doing. The institution feels it cannot now undertake the subsidizing of the study of hobby or tangent subjects, but only fields wherein it reasonably may expect some return in increased worth of the employee in his normal work.

The employee must take his letter of departmental approval to the personnel office for indorsement and clearance and then go to the admissions office where he is issued a permit to register as a university employee. From then on the employee follows the normal registration processing of any student. Upon satisfactory completion of the course the employee's grade and credit become a permanent university record just as does any student's academic record.

Any employee on the forty-hour week standard who takes a class during normal working time is excused from his work but must make up the time at some other hours. Any employee on the forty-four-hour week standard (largely the professional and administrative groups) who attends a class during normal working hours is not required to make up class time.

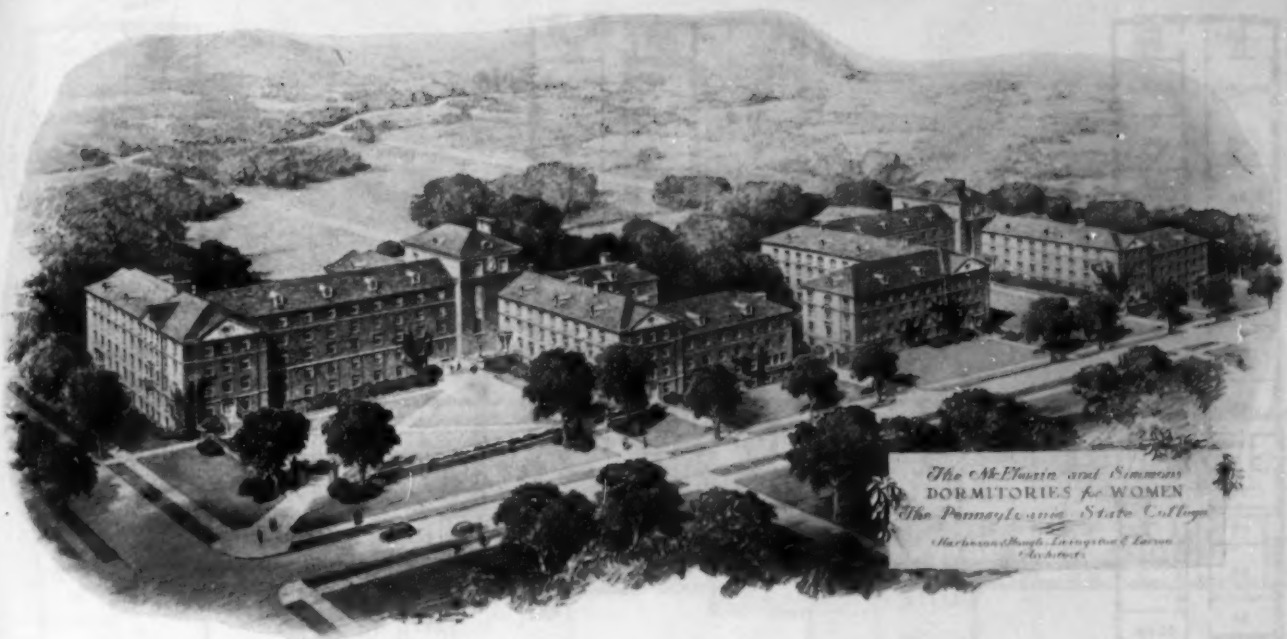
## DEANS' APPROVAL NECESSARY

If the employee desires to have the academic work he takes apply toward a formal degree, he must make the necessary arrangements. If the course taken is in a school or college other than the one from which he expects to receive a degree, he must have the registration approval of both deans.

One additional local rule may be of interest. Because of the tremendous number of students registering at the normal time, an employee is required to process his registration on the day following regular registration, but he is not assessed the usual late fee.

What has been the result after one year of the plan's use? In the main, this privilege has been greatly appreciated by nonacademic employee groups. We have office personnel taking courses in typing, shorthand, accounting and other business subjects; administrative employees taking courses toward graduate degrees in management, education and other fields; a meat department head taking a course in bacteriology; social directors taking personnel work; bakers taking chemistry. In the future we expect a steady increase in employee education.





BECAUSE RESIDENCE HALL LIFE plays so important a part in the cultural and social development of college students, stress has been placed on creating an atmosphere of refinement for the relaxed social intermingling of students and of students and faculty in the planning of Penn State's two new residential halls for women.

The site chosen is at the eastern end of the campus, beyond the academic buildings, and near the present women's residence halls and recreation building. The new halls also adjoin that part of the campus that will be developed as the women's college. These two new units are the first of a proposed larger residential area for women students that will also include athletic and recreational fields.

Situated on a high elevation in relation to the terrain toward the east and south, the site commands a view of the distant mountains, with a particularly beautiful view of Mount Nittany.

The other buildings in the immediate vicinity are Georgian in character, and the new structures follow the same style in order to give unity and harmony to the entire residential group. Materials are conventional red brick with limestone band courses and wood cornices and trim.

The plan is informal in shape in order to take further advantage of the natural contour of the site and the unlimited vistas of valley views. In planning the lounge and dining areas, particular attention was given to orientation in order to take full advantage

## THIS RESIDENCE HALL HAS UNUSUAL FEATURES

**H. W. LOMAN**

Purchasing Agent  
Pennsylvania State College

of this feature. The large lounge has a generous bay window opening this room to the view, and the adjoining terrace provides a full sweep of the distant mountain range. A smaller terrace at the fifth floor level provides a sheltered area for sun bathing.

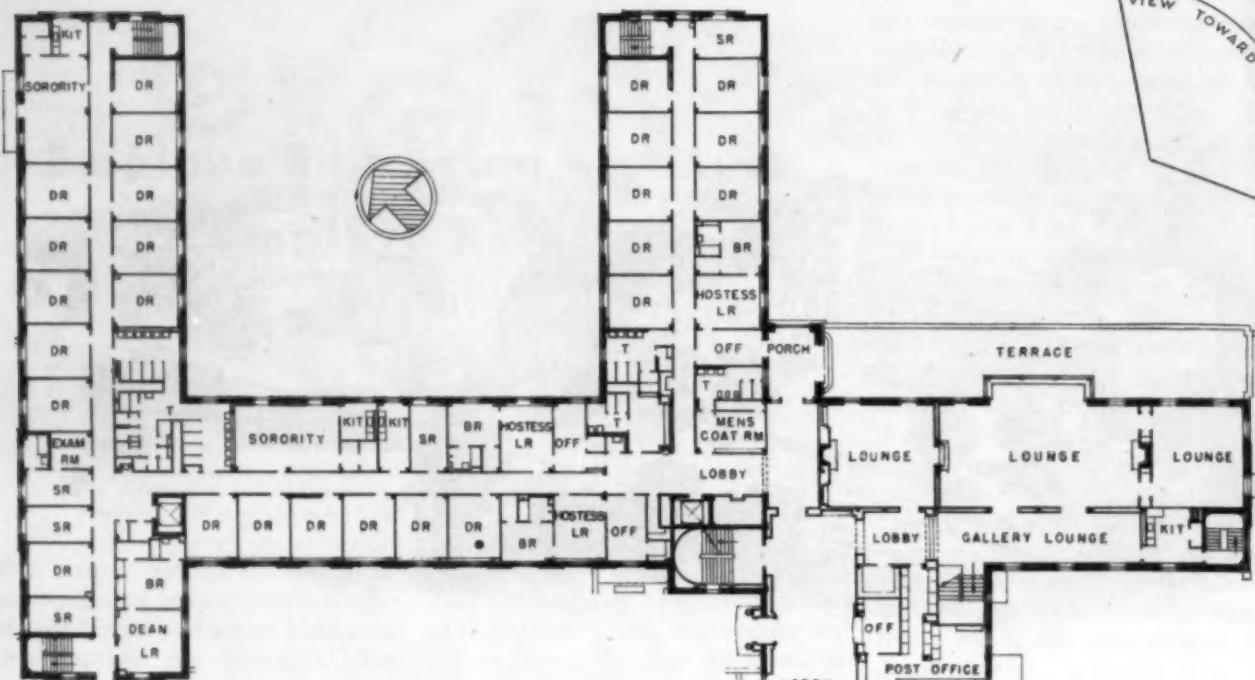
Lobby and lounge areas on the first floor are generous and vary in form and size. Directly across the lobby from the main entrance is located the office, which is adjacent to the post office and recreation room. The post office, which consists of individual locked boxes and a parcel post window, is at one end of the recreation room, and a canteen or snack bar with kitchenette is located at the opposite end. The recreation room has adequate storage space for game equipment when the room is to be used for small dances and other parties. The lounges differ in treatment from definitely informal to semiformal in character.

From the lobby one may enter the gallery lounge, which is adjacent to

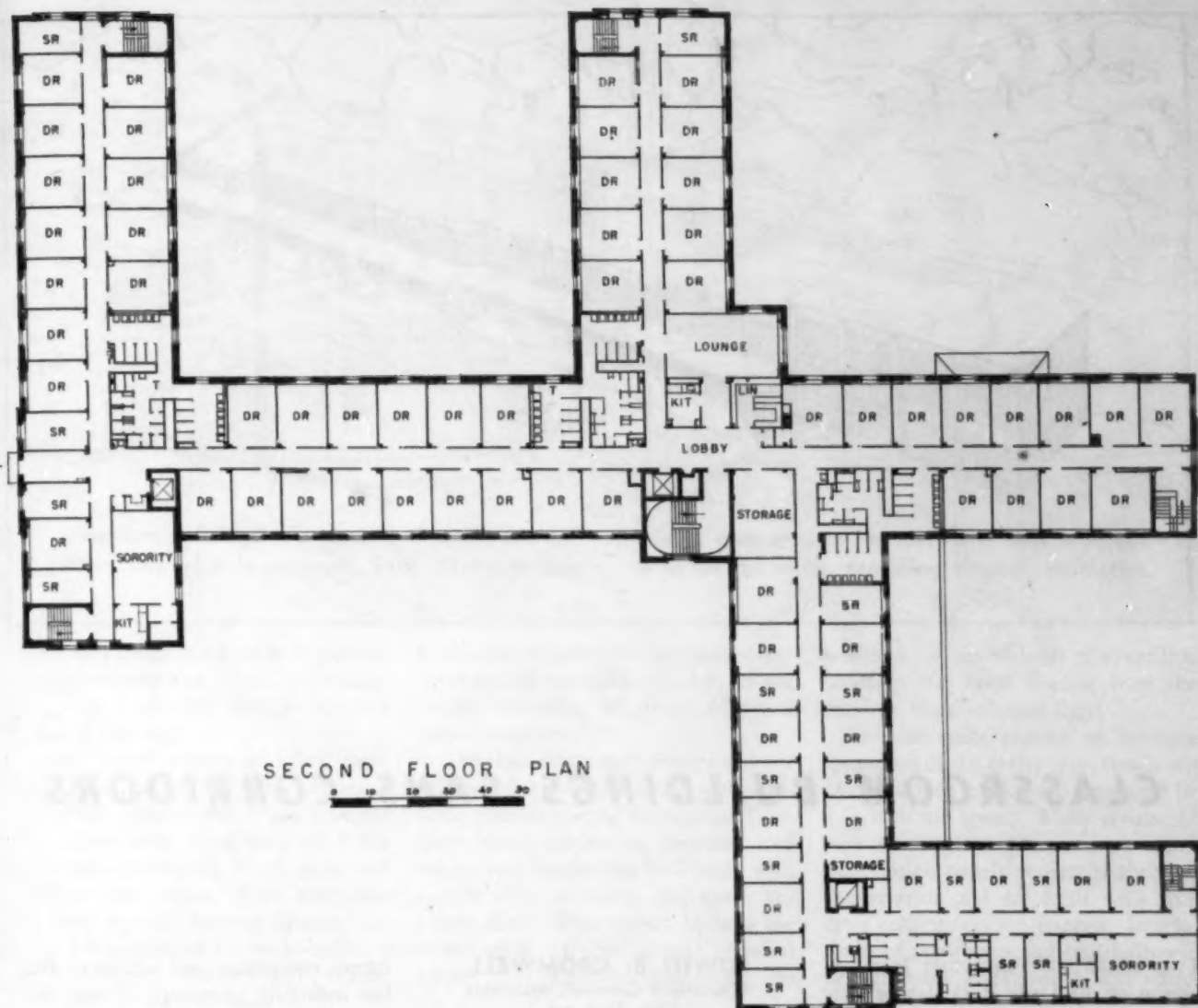
three semiformal lounges. These are used for receptions and teas and also for general social entertainment. Adjoining this group is a kitchenette for the convenience of entertaining. Other informal lounges with kitchenettes are located on the second and third floors. The terrace, the hostess suites, the powder room, and the dormitory corridors are readily accessible from the lobby, a treatment that provides for easy supervision.

Each of the two residential units has four hostess suites that include an office, a living room, a bedroom with private bath, and ample closet space. In addition, the one unit has a similar suite for the dean of women.

An unusual feature of the two new buildings is the provision of sorority suites, eight in each unit. Each suite consists of a living room approximately 17 by 26 feet, a kitchenette, and storage space for ritualistic material. For sorority initiation a large room is provided in the basement, complete with an anteroom and a sep-







arate closet for each sorority in which to store initiation paraphernalia.

Also located in the basement are rooms for the storage of bicycles, sleds and skis. Here, also, is a typing room with soundproof ceiling where a student may take her typewriter and do her work without disturbing other occupants of the building. On this floor, but segregated from the student area, are the receiving room and housekeeping department, which consists of linen room, laundry, repair shop, and necessary storage rooms.

The dining room area is located on the ground floor level and consists of receiving dock, food storage room, vegetable preparation space, kitchen and two dining rooms in each unit. There is also a special dining room for student employees.

Space has been saved in these new units by the elimination of large food storage rooms and butcher and bake shops. A foods building, being erected

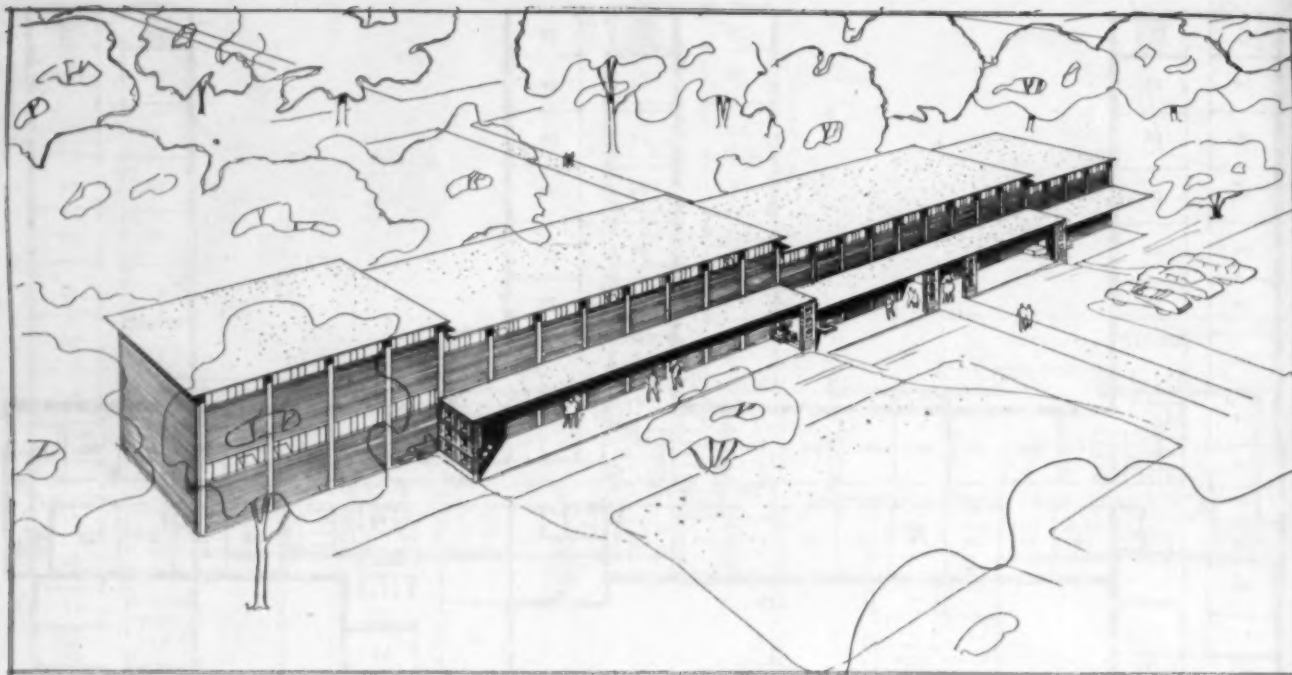
simultaneously, will provide for these facilities for the entire campus. The kitchen has been designed to provide for cafeteria breakfast, and table service for lunch and dinner. Student waiters will be used.

The student rooms in the ratio of two doubles to one single accommodate 477 students in the one unit and 534 in the other. The single room is 9 by 17 feet, and the double room is 13 by 17 feet. Each is complete with built-in wardrobes fitted with shelves, robe pole, shoe racks, and spaces for the hanging of all types of clothing. There is an open space between the closet and the corridor wall for hanging wet articles, such as raincoats and umbrellas. On the opposite side of the wardrobe is the built-in dresser with ample drawer space, what-not shelves, mirror and recessed light fixture. This entire unit not only is compact and convenient but also serves as a sound deadening feature between the rooms.

Flanking the recessed radiator located under the window are two built-in bookcases. The movable furniture consists of single study tables complete with study lamp and chair, an upholstered easy chair, single beds with inner-spring mattress, bed linen, two blankets, bedspread and matching window draperies. A night stand is located between the beds of the double rooms and adjacent to the bed in the single room.

Floors are linoleum; walls are pre-colored plaster. Student rooms throughout are treated in soft tints of gray, green, peach or yellow. The gray and the green rooms are located on the southern or warm exposures.

These and many other fine, but not extravagant, features will please Penn State students for years to come. They are the result of careful study and planning by the college architects, Harbeson, Hough, Livingston and Larson of Philadelphia.



## CLASSROOM BUILDINGS SANS CORRIDORS

TWO YEARS AGO PRESIDENT JOHN A. Larson of the Little Rock Junior College was told that he would have to move out of the buildings the school occupied. This word came to him when the college was at a peak enrollment, having jumped from 400 in 1940 to 1200 in 1946.

The buildings were owned by the Little Rock school board. Since it, too, was faced with classroom shortages, the board was compelled to serve notice on the junior college to move out. While the college enjoys the income from a liberal endowment bestowed by the late Gov. George W. Donaghey, this could not be used for capital investment according to the terms of the endowment.

### GIVEN IDEAL SITE

A group of public-minded businessmen met with the school board to see what could be done about a new plant. Raymond Rebsamen, Little Rock businessman, gave the school an 80 acre tract, well located and beautifully wooded, an ideal site for a new school. A three-year campaign was started to raise \$750,000, but within a year the

**EDWIN B. CROMWELL**  
Ginocchio & Cromwell, Architects  
Little Rock, Ark.

goal was in sight. As architects, we were instructed to complete working drawings and take bids for the first two units of the permanent school. These were to provide 25 classrooms.

Meanwhile, the college obtained a hospital ward, mess hall, and three barracks buildings from the U.S. Army air field at Stuttgart, Ark., and, with the help of the Federal Security Agency, had these installed on the new site as temporary science and engineering classrooms, cafeteria and library. These were placed where they would not be in the way of future permanent improvements.

Plans were completed on the two classroom units, and the contract was awarded in October 1948, on a low bid of \$236,000. Seven bids were received, the average being \$250,000. Work was started in November. The cost was amazingly low for fireproof construction, being \$9440 per classroom and \$6.30 per square foot, exclusive of landscaping, site improve-

ments, equipment and architects' fees, but including plumbing, electric wiring and fixtures, and heating.

This low unit cost was due in part to the use of a simplified reinforced concrete structural system, based on a modular design, in which a standard architectural projected window size was used as the module. Costs also were reduced by simplifying interior and exterior finishes.

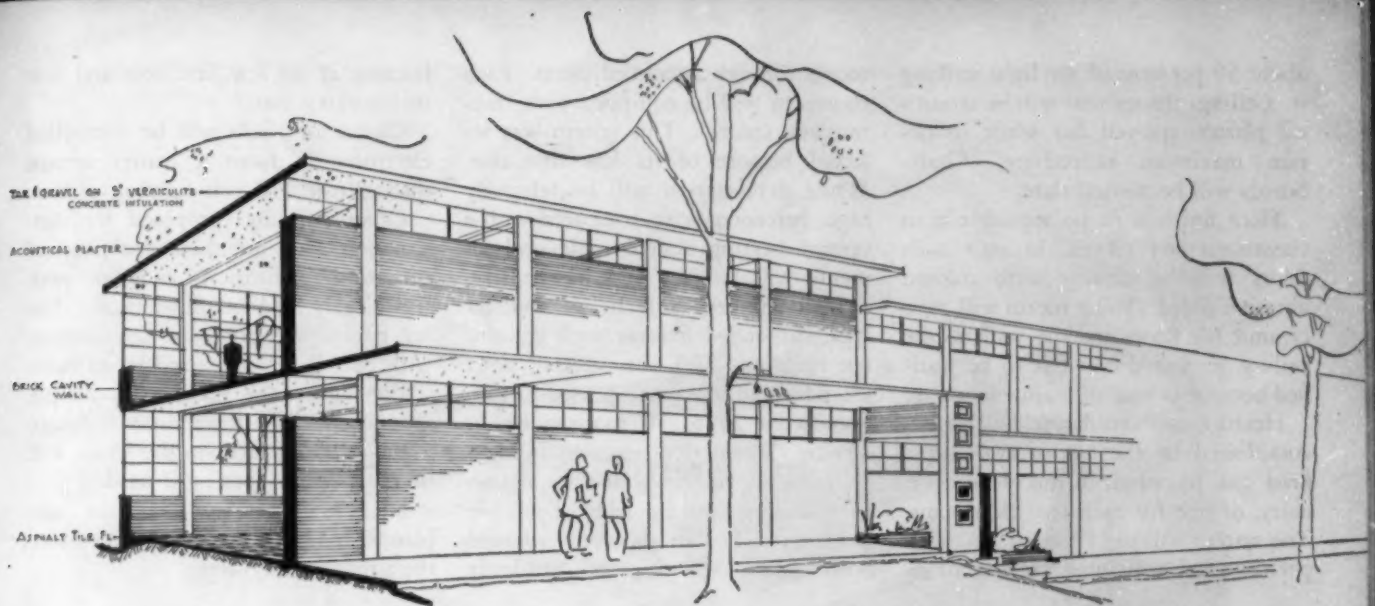
### FLANK LARGE COURT

The accompanying drawings show these first two classroom units flanking a large court. A future building, housing the library and administration offices, will be on the main axis of this court. Classroom buildings face north and south, giving each classroom a large glass area on the north and small high windows on the south.

North classroom light was determined to be best because it produces an even intensity of lighting. It will eliminate the need for shades, blinds, baffles or awnings.

The college has a full summer session, and large east and west windows would make the rooms unbearably hot.





Classroom buildings face north and south, one on either side of a large court. Each classroom has

a large glass area on the north and small high windows on the south, providing through ventilation.

The small south windows will provide through ventilation (local prevailing breeze is from the Southwest) and bilateral lighting.

The "entry" system is being used, each building having three entrance stair halls, around which are grouped four classrooms, a teacher's office for each two classrooms, boys', girls' and teachers' rest rooms. Each entry has its own separate heating system. Entries are connected on each building by a walkway, covered by a cantilevered concrete roof slab.

During the preliminary stage of planning, sketches on this system were compared with sketches of the typical corridor plan with classrooms on each side. It was found that the entry system reduced the finished area of the building by about 20 per cent, and since corridors require the most expensive finishes, such as terrazzo floors and tile wainscots, we felt that their elimination was much to be desired.

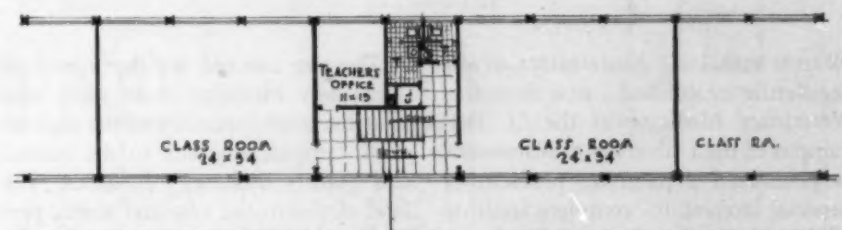
The two principal peeves from school administrators about their classroom buildings seem to be (1) the difficulty in controlling light and ventilation in classrooms, and (2) the maintenance and control of long corridors. By using large north windows,

with south windows for supplementary lighting and ventilation, and by eliminating corridors, we hope to avoid these complaints.

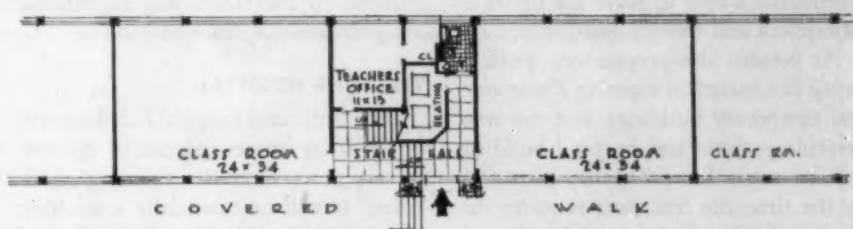
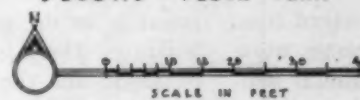
The buildings are constructed of reinforced concrete frame with uniform column spacing throughout. Concrete beams, supporting floor and roof loads, run across the buildings with simple slabs spanning the space between them. This system permits the elimination of the usual spandrel beams over windows and allows the

windows to extend to the ceiling, avoiding the usual shadow over the window from reflected light.

Exterior walls, resting on concrete frame, are of the cavity type, consisting of two 4 inch brick walls separated by a 2 inch air space. Walls consist of panels fitting between concrete members. Brick panels project slightly on the exterior and are flush with concrete columns on the interior. Interior finish of classrooms and stair halls will be light pink brick, which will reflect



SECOND FLOOR PLAN



FIRST FLOOR PLAN  
TYPICAL ENTRY PLAN

Each building has three entrance stair halls, around which are four classrooms, a teacher's office for each two classrooms, boys', girls' and teachers' rest rooms. Entries are connected on each building by a walkway.

about 50 per cent of the light striking it. Ceilings throughout will be acoustical plaster, sprayed flat white to obtain maximum reflectivity. Chalkboards will be natural slate.

Floor finish is to be asphalt tile in classrooms and offices. In stair halls floors will be cement with colored abrasive added. Toilet rooms will have ceramic tile floors and tile walls to the ceiling, an added cost felt to be justified because of ease of maintenance.

Heating and ventilating will be accomplished by the use of two direct fired gas forced-air furnaces in each entry, or one for each two classrooms. The system will use fresh air up to 50 per cent and will introduce the air to

rooms through concealed ducts. Each classroom will be equipped with thermostatic control. This system was selected because of its low first cost. While depreciation will be relatively high, percentagewise, compared with a central heating system, unit replacements will be easy and inexpensive.

Light fixtures will be of indirect type, suspended fixtures with concentric rings and 500 watt silvered bowl incandescent lamps being used to produce from 25 to 30 foot-candles in service. This design was employed to deliver a uniform level of illumination with an optimum condition of relative brightness. The incandescent silvered bowl source was selected primarily

because of its low first cost and low maintenance cost.

Clocks and bells will be controlled electronically from a master system through the 110 volt lighting system.

Other buildings proposed for construction soon are those for physical education, auditorium and fine arts, and library and administration. The last named will dominate the campus, with two wings connected by an open colonnade on the main axis. Ample space is available for additional future expansion. The area to the south will be reserved for housing if needed.

Neil Hamill Park was the site planner, and W. Dewoody Dickinson, the structural engineer.

## ***Complete diagnostic and treatment facilities in this*** **VETERINARY CLINIC AND HOSPITAL**

### **WINSTON A. CLOSE**

Associate Professor of Architecture  
and Assistant Advisory Architect  
University of Minnesota

WHEN THE 1947 MINNESOTA STATE legislature established a new School of Veterinary Medicine at the St. Paul campus of the University of Minnesota, it postulated a planning problem of unusual interest, for complete facilities of this type are relatively rare in American universities.

The curriculum of the school comprises two years of preparatory work, followed by four years of clinical studies. The school is planned to accommodate 200 students, an enrollment considered ample to serve the needs of Minnesota and the adjoining states.

At present the preparatory work is being conducted in existing classrooms and temporary buildings, but the new veterinary clinic and hospital building will be ready for occupancy next fall, by the time the first class requires the clinical facilities. Ultimately, a new basic science unit will be added to provide better quarters for the pre-clinical work.

The site selected for the School of Veterinary Medicine is an open area near the south boundary of the agricultural campus, adjacent to the animal and poultry husbandry facilities. The land slopes to the east and south, permitting grade access at various levels. It is ample in size, imposing no limitation as to the general form of the building. There is convenient access by truck, and the building is easily located—an important consideration because many of the clients who bring patients to the clinic will be visiting the premises for the first time.

### **TEACHING HOSPITAL**

The clinic and hospital building will be the most interesting one of the veterinary group from the planning standpoint. It will be essentially a teaching hospital, with complete diagnostic and treatment facilities for both large and small animals.

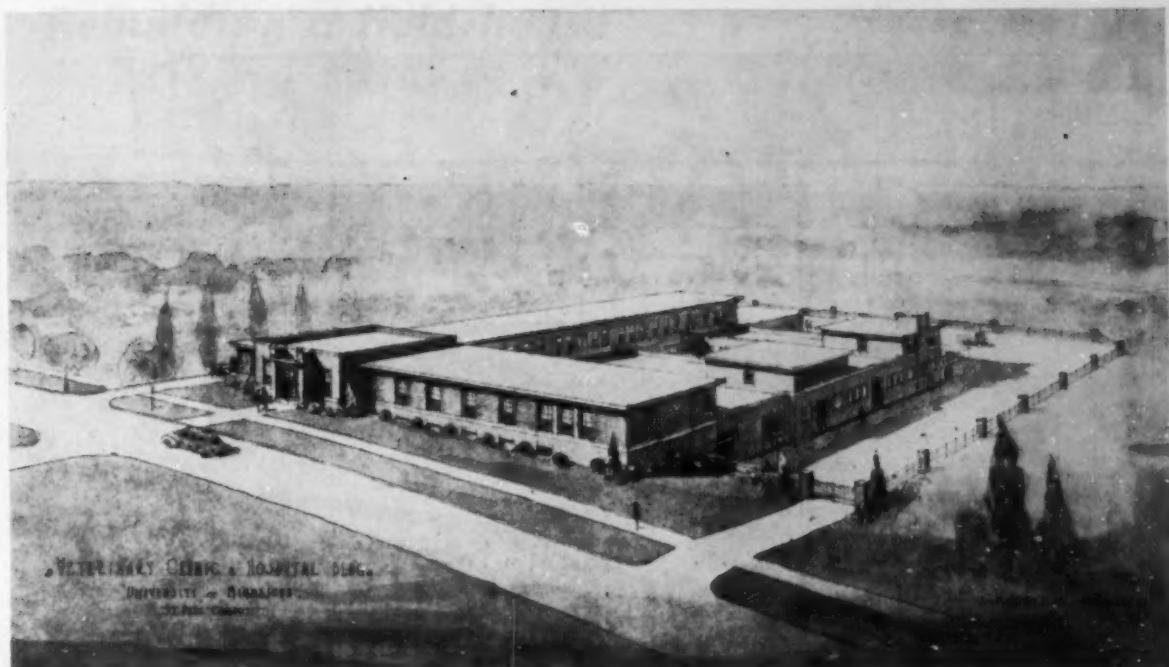
The first floor, which has grade

access along the north and west, will provide a large waiting room, administrative offices, interns' quarters, and a classroom seating 100 in a north-south wing.

This wing connects with an east-west wing that will house outpatient facilities, pharmacy, radiographic and surgical suites, diet kitchen, laboratories and wards for small animals. Dog runs will be provided on the roofs of the lower-story wings. Household pets and small animals, usually brought in by their owners in automobiles, will be received alongside the main entrance and from this point will proceed either to the outpatient quarters for treatment or to the wards.

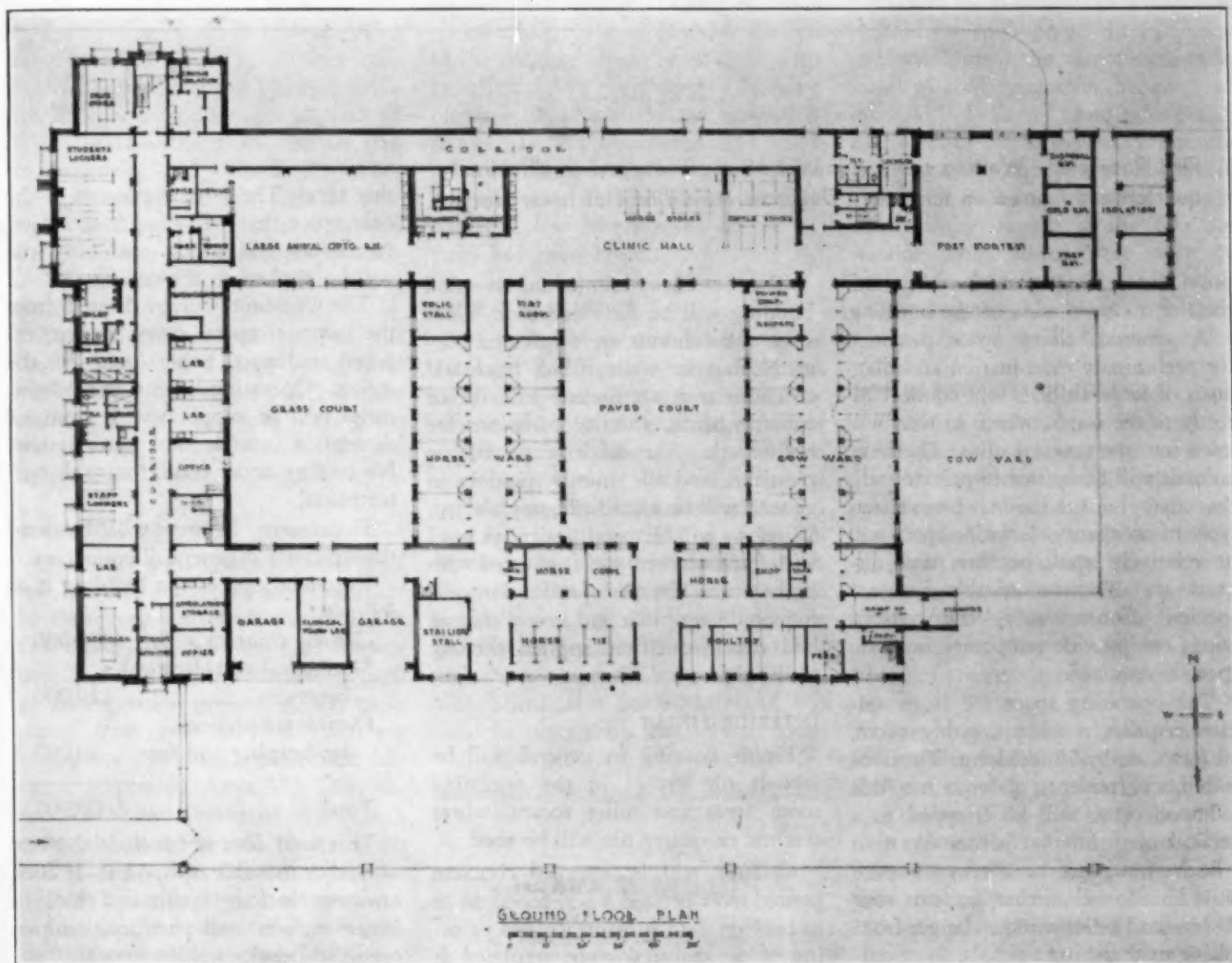
The ground floor will house research laboratories and locker facilities in the administration wing, surgical facilities for large animals below the east-west wing, and large animal wards in the north-south wings. A second east-west wing will enclose exercise courts and

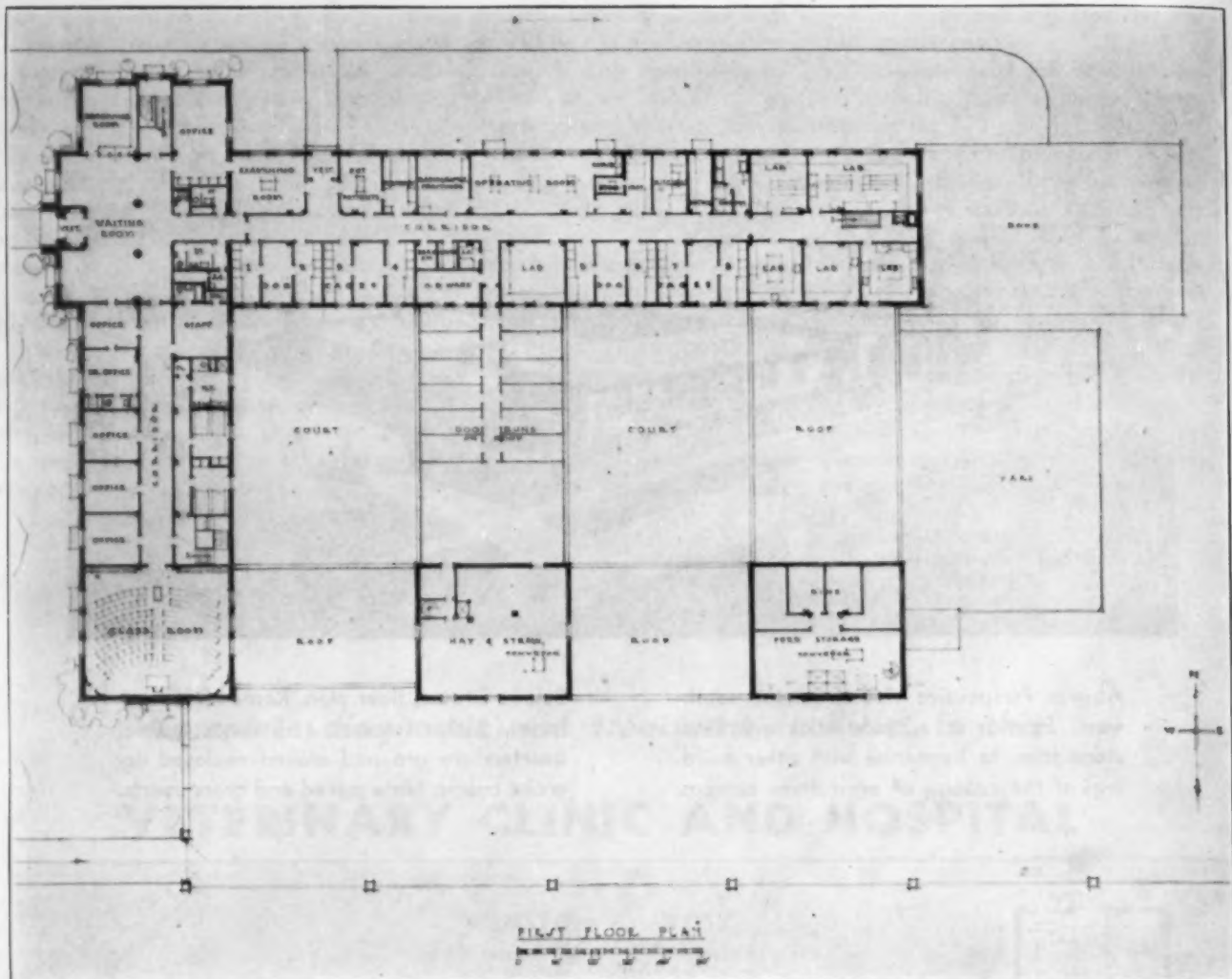




Above: Perspective view from the southwest. Exterior is red face brick with limestone trim, to harmonize with other buildings of the college of agriculture campus.

Below: Ground floor plan. Research laboratories, locker rooms, and large animal quarters are grouped around enclosed exercise courts. Note paved and grass courts.





First floor plan. Waiting room, administrative offices, and small animal quarters are housed on this floor. Dog runs are on roof of lower story.

provide receiving space for large animals at the south side of the building.

A generous tie-up space provided for preliminary examination and diagnosis of large animals will connect directly to the wards, which in turn will open into the surgical suite. The large animals will be housed in private stalls that may be subdivided for various types of occupancy. Isolation space will be relatively small because most diseases are noncommunicable between species. Consequently, the various wings can provide temporary isolation space as required.

The operating space for large animals requires a whopping big room, 30 feet wide by 50 feet long. The non-ambulatory patients, moved into this room on carts, will be strapped to a vertical platform that pivots down to a horizontal position. Plenty of space must be allowed so that students may observe and assist without danger from rolling or thrashing animals.

The veterinary clinic and hospital building will be fully fireproof. Floor slabs and columns are reinforced concrete. Exterior walls of face brick and cut stone trim are backed with tile or concrete block. Interior partitions are hollow tile. The office areas will be plastered, and the animal quarters in general will be glazed tile, unplastered. Windows will be metal; stairways, steel with filled concrete treads covered with asphalt tile. The roof specification calls for a built-up pitch and gravel roofing laid over insulation applied directly to the slab.

#### INTERIOR FINISH

Finish flooring in general will be asphalt tile except in the operating room areas and toilet rooms, where ceramic or quarry tile will be used.

Ceilings will be exposed concrete poured over pressed wood forms so as to provide a smooth surface. No painting of the ceilings is contemplated at

this time. The large classroom is the only space that will require acoustical correction, and sound absorbing tile will be applied to the ceiling.

The building will be heated from the campus central steam system, exposed radiators being used in the rooms. Operating rooms and laboratories will be supplied with fresh air through a central trunk duct system. No cooling or air conditioning is contemplated.

Fluorescent fixtures will be used throughout for general illumination.

Estimated cost of the building is as follows:

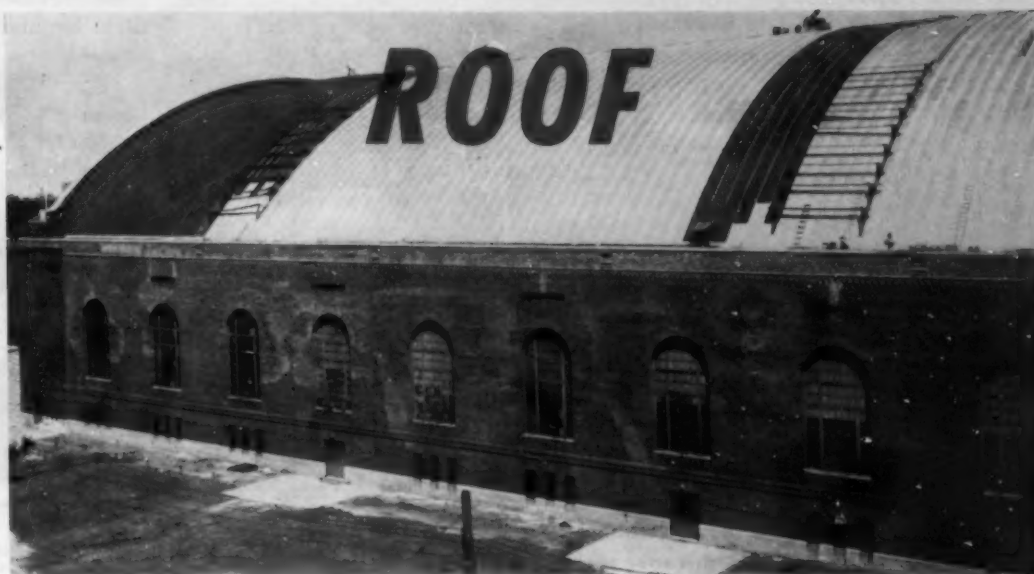
General contract .....	\$450,000
Mechanical and electrical contracts .....	110,000
Outside connections, landscaping and fees..	40,000
Total .....	\$600,000

This total does not include the cost of land or movable equipment. It does, however, include specialized built-in items, such as stall partitions, animal cages, and enclosures.



## Rebuilding a field house

Top vapor seal is in place and the aluminum roof and starter strip are being placed.



THE UNIVERSITY OF MINNESOTA Field House is the largest athletic shelter in the Western Conference. The building, constructed during the fall and winter of 1927-28, is 236 by 444 feet.

The frame is made up of three hinged arches spaced at 30 foot centers, with the center pin 100 feet above the floor of the building. Sidewalls of brick are 16 inches thick and are tied to the trusses; end walls are 28 inches thick and are braced with steel columns and lateral bracing trusses. The roof covers an area of approximately 126,000 square feet, exclusive of the gutters.

The maintenance and repair of this roof began to be a large item before the building was seven years old. As much as \$15,000 was spent during the years when it was recoated and stripped.

### EXPENSIVE PROJECT

By 1940 replacement of this roof was listed as one of the jobs that must be taken care of as soon as possible. For the reason that the job was unusually difficult and complex, as well as an expensive project, it was postponed from year to year. The war emergency precluded replacement during that period. After V.J. Day, the shortage of the usual roofing and deck materials caused the university to re-study this problem for a solution making use of available new materials.

During the years of delay, investigations were made to find the cause of

failure of the original roof. Early inspections from the catwalks, which run through the trusses just below the deck, disclosed thousands of screws projecting through the roof deck from the outside coverings. During the winter months large areas of the underside of the decking would be covered with frost formed by condensation freezing on these areas and on the projecting screws. It was discovered that these areas of frost were in the regions where the roof materials had been severely damaged and where most of the repairs had been made.

### HOW IT WAS BUILT

The original roof was built up as follows: A 20 gauge steel deck was fastened to the steel purlins. The deck was insulated with a 1 inch layer of board made of flax straw fastened to the decking with long sheet metal screws fitted with standard roof caps. The roof itself was made up of 36 inch sheets of heavy asphalt roofing paper with the lower sheet 17 inches to the weather and heavily coated with a mineral aggregate. The upper half of this sheet was cemented to the insulation board with hot asphalt and was held in place with similar long sheet

metal screws fitted with roof caps. These screws also passed through the insulation board and through the metal decking.

The failure of the roof was traced directly to the thousands of screws used to hold the roofing and the insulation in place. During the winter these thousands of cold conductors became covered with balls of frost where they extended below the deck inside the building. During the normal daytime use of the building when the temperatures inside ranged in the 50's and outside temperatures were near the zero mark, these balls of frost increased in size, gathering the moisture from the warmer humid inside air.

### WHERE FAILURES OCCURRED

The first roof failures and the first insulation failures occurred near the top of the structure where the air is warmer; therefore, failure of the roof was caused by the moisture leaking through and breaking down the fibrous insulation board. This moisture came from the inside of the building, penetrating the insulation board through the small holes made by the screws.

The process followed this sequence: When the building temperature was raised for public use at athletic events, the balls of frost that had collected on the screws melted and formed drops of water. Some of these drops fell off and trickled down the underside of the decking to the next hole. Some of the moisture soaked through into the in-

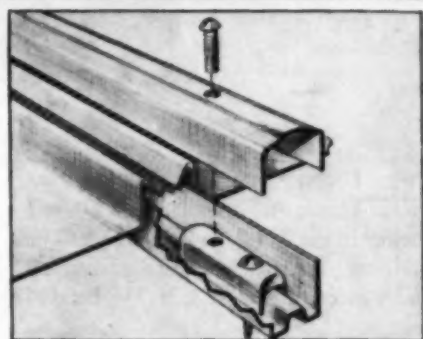
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### HARRY L. WILSON

Senior Civil Engineer  
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Above (left): This shows the condition of the original roof of the field house. Above (right): Bottom vapor seal and wood battens are in place and workmen are shown placing the cellular glass insulation. Right: Diagram showing exploded detail of the aluminum roof assembly.



sulation and, as the insulation pad was attacked repeatedly in this manner, it finally broke down, losing its insulating value and creating the large areas of frost on the underside of the decking.

The frost that formed on the decking melted as the temperature rose, and the condensation ran down the underside of the sheet until it encountered a projection and dropped off onto the customers. Many times during a basketball game it was necessary to mop the playing floor.

#### BOARD DISINTEGRATES

The failure of the fiber insulating board caused large areas to become saturated, and the alternate freezing and thawing disintegrated the board. It began to work down under the roofing, forming large bags and bulges, tearing out the screws and breaking the roofing in many places. Besides damaging the roofing, the breaking down of the insulators increased the expansion and contraction of the deck. Large ridges formed all over the roof as the original expansion joints became filled with the disintegrated insulation board. The repair of the roof became an endless job. Stripping of the roof and the several roof coatings, patching with membrane, and all the tricks in a roofer's book could not save it.

The solution to the problem resolved itself into the following steps:

1. To find a replacement roof of light-weight materials.

2. To provide a proper insulation pad with a resistance factor of at least 6 or a conduction coefficient of 0.16, which should prevent condensation forming on the deck or around any roof fastening devices.

3. To provide a vapor seal on both the top and bottom of the insulation pad.

4. To eliminate all through metal fastening devices that might extend from the outside and serve as a conductor of the cold.

5. To provide suitable expansion joints in the decking and to use roof materials designed to provide proper expansion and contraction.

6. To provide an insulation pad that embodied in itself a high resistance to moisture absorption without sacrificing the insulating value of the material.

7. To provide a roof membrane or covering that would resist the severe winter conditions of this climate, as well as the summer exposure, and, at the same time, satisfy mechanical requirements.

#### STUDY ALL ANGLES

Because every roof will at some time and in some way leak from a mechanical failure, it was hoped to find a roof design that would isolate the damaged areas and at the same time provide simple means of repairs of these areas.

Many types and many combinations of roofing insulation were investigated. Various changes in the decking were

studied in order to find a more satisfactory method of holding the roof in place. A wood deck was gradually eliminated for the reason that it added considerable weight to the structure and at the same time added to the cost of the job. Membrane roofing on the steep portions of the roof was impractical. A new metal roof of some sort repeatedly came up as a solution to the problem.

#### CHOICE RESTRICTED

Mechanical requirements restricted the choice to a corrugated metal roof of one of the several metals and types, a standing seam roof of similar materials, or a batten type of roof of like materials. All three of these were studied in connection with our mechanical requirements.

The corrugated roof lacked the proper weather protection and presented a more difficult problem with the fastening devices. The standing seam type of roof satisfied the weather protection and expansion requirements but left the problem of suitable fastening devices. A covered wood batten type provided all the advantages of the standing seam roof and a solution to the fastening problem. The aluminum batten type finally selected more



nearly fulfilled our special requirements than anything that could be found.

The old roof and the insulation were removed entirely. The damaged areas of the deck were covered with  $\frac{1}{8}$  inch or  $\frac{3}{16}$  inch asphalt hard board fastened in place with small sheet metal screws. All the old sheet metal screws were removed and the ragged holes pounded down. Bulges formed by the failure of the expansion joints in the old deck were cut loose and flattened down to the deck and left loose. These bulges occurred at various places and did not seem to follow any particular pattern.

#### THE NEW ROOF

The new roof was built up as follows:

1. A 15 pound asphalt sheet was drip-mopped to the decking to provide a loose sheet.
2. A 30 pound asphalt vapor seal was hot-mopped solid to the loose sheet.
3. Treated  $1\frac{1}{2}$  by  $2\frac{1}{8}$  wood batten strips spaced at  $37\frac{3}{4}$  inch centers were fastened to the decking by a small sheet metal clip nailed to the batten with 3D galvanized barbed nails. The clip was fastened to the deck by two small sheet metal screws. Clips were spaced at 3 foot centers along the batten.
4. A 2 inch glass insulation pad was set in a generous mopping of hot asphalt, filling in between the wood battens. Furnished in blocks 12 by 18 by 2 inches, it fitted snugly between the batten strips.
5. A 30 pound asphalt sheet vapor seal was then mopped solid over the entire area, covering and sealing the insulation pad as well as the batten

strips. The top of this sheet was left dry to allow free action of the metal roof.

6. The 16 gauge aluminum trough battens were accurately spaced and fastened to the wood battens with long aluminum screws that did not reach through to the metal deck. These screws were fitted with an extruded aluminum block clip device that served later as a nut to hold the machine screw from the batten cap unit.

7. A starter sheet was placed at the bottom and the succeeding 3 by 10 foot filler sheets were hooked into the 2 inch weather lap pulled up into a tight lock with the edges formed to drip into the trough batten. These accurately formed filler sheets had a  $\frac{1}{4}$  inch allowance for expansion sideways between each two battens.

8. The batten cap was next placed over the assembled sheet, lapping over the outside of each batten and lapping at the ends in order to weather. The caps were fastened to the extruded aluminum blocks previously placed in the trough batten by a  $\frac{1}{4}$  inch aluminum R.H. machine screw.

9. The ridge was built by covering a 2 by 10 inch plank placed over the top vapor seal and capped as a wide batten, forming a weather lock with the top sheet.

#### ACCURATELY PREFORMED

All filler sheets were accurately fabricated from sheets of 3S- $\frac{1}{2}$ H, 20 gauge aluminum. The trough battens and the batten caps are formed from extruded 0.052 aluminum. The clips are special extruded aluminum, sawed, drilled and tapped. All sheets and battens are accurately preformed and the battens accurately punched for the holddown

screws and fasteners that are spaced at 20 inch centers up the roof.

This roof was completed during October 1948 and has met and satisfied the requirements of the first winter, a severe one.

The large gutters were insulated with 1 inch of cork insulation. It was necessary to allow some heat loss through this part of the roof in order to melt the snow that slides down from the roof.

During the unusually heavy early winter snow, this feature worked perfectly. The gutters were protected with top and bottom vapor seals similar to the main roof. Over the top vapor seal a five-ply steep asphalt roof was mopped.

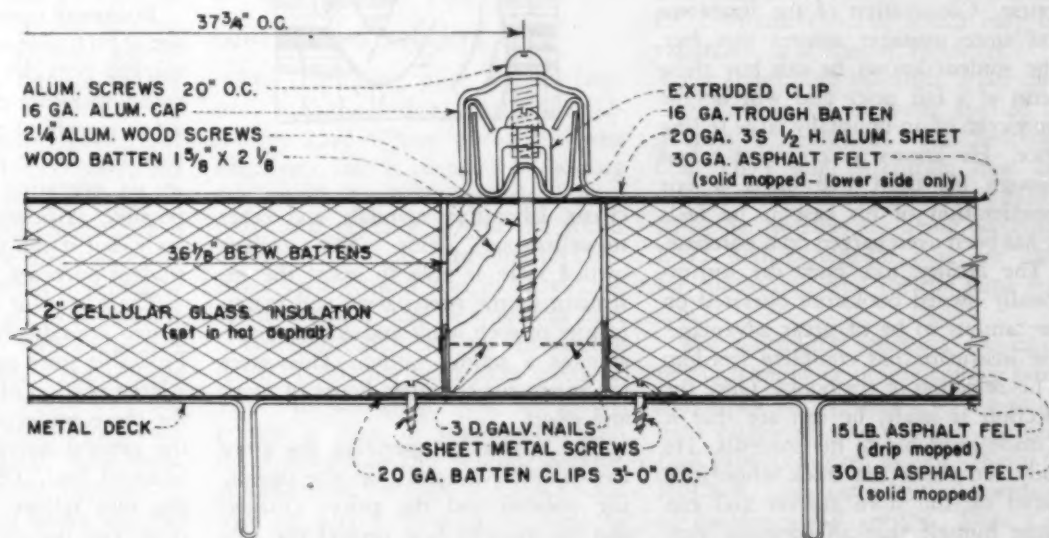
All wall flashing was preformed to fit into the metal coping on the end walls. The end wall coping is batten type covering the old stone cap completely and dripping to the outside. The sidewall coping is likewise a batten type with the battens fastened at right angles to the old coping stone.

#### DONE BY CONTRACT

All the work was done by contract. The removal of the old roof cost \$7300, or \$0.06 a square foot; building up the vapor seal and the insulation pad cost \$81,053, or \$0.645 a square foot; the aluminum batten type of roof cost \$103,000, or \$0.815 a square foot, and the aluminum batten type of coping cost \$4800.

The details of the insulation pad, the vapor seals, the wood battens, and the several types of fasteners were worked out in the office of the supervising engineer for the university to fit the specifications for the aluminum roof, applied by the manufacturer.

Diagram showing details of the new roof construction.



## Should a college operate its own

# BOOKSTORE?

AN INSTITUTIONALLY OWNED BOOKSTORE is a highly desirable auxiliary enterprise for the campus of a university permitted to have such an operation. A store located on the campus is of untold advantage to students and faculty, and operation by the university assures these advantages within the realm of adequate supervision and control.

The student has a source of supply for his textbooks; he is able to procure the correct title and edition of a text selected by his instructor. Necessary classroom supplies and equipment are also available for him. These have been ordered and selected by his instructor, who is able to specify to his colleague and co-worker, the store manager, the exact type of such items as required in the class. The student finds his purchases can be made with the same ease and convenience as attending his classes, since the store is located on the campus. He has had in every sense of the word "one stop service" from an assured source of supply.

The store is required to have the textbooks, supplies and equipment for him; because the institution provides the course of study, the bookstore must supply the necessary items for this course. Cooperation of the instructor and store manager assures this fact. The student knows he can buy these items at a fair price and will not be the victim of an unusually large selling price. He knows a complaint raised through his dean will bring a fair consideration of his case if he feels he has been overcharged on a purchase.

The faculty, too, finds the institutionally owned bookstore operated on the campus to be of great advantage. The instructor has complete freedom in his selection of textbooks. Once the selection is made, he can see that it is made available to his students. He easily can check the stock when it is placed on the store shelves and can assure himself that an adequate sup-

### J. J. RITTERSKAMP

Director of Purchasing  
Washington University

ply of the correct titles is on hand. The instructor has the opportunity to specify supply and equipment items necessary for his class, and he may examine samples before specifying the item.

It is a simple matter to effect close cooperation between the instructor and the store manager in such matters because the campus store and its management are a part of the university. The instructor is not troubled with the problem of finding a source of supply for his requirements; he has a university store at his service, whose sole responsibility is to supply his class and office needs. He is assured that his desires will be satisfactorily and reasonably filled.

Many instructors develop their own special items of instructional material to use in their classes, such as outlines,



charts, laboratory manuals, and other miscellaneous items. The college owned store is able to assist the instructor in the preparation and manufacture of such items and is then available as a selling outlet. This saves the instructor countless hours of work and effort.

The university operating the store has complete control over the operating policies and the prices charged and can thereby best protect the stu-

dents in their purchases of required class and laboratory items. It is an obligation of the university to guard its students against unreasonable profiteering on items the student must buy for his classes, and this is best afforded by institutional management of the store enterprise. The university can assure the students and the faculty the service each requires of the store. It provides a source of supply for the necessary instructional items, and thereby the university knows its instructional program will not be disrupted or hampered by a lack of suitable instructional equipment or materials. This eliminates one serious cause of an unsuccessful curriculum.

The store also can provide the university the opportunity of offering other services and conveniences for students and faculty. Lost and found bureaus, ticket sales outlets, school publications sales and distributions, pickup and delivery service, mail, parcel post, and express facilities, and other miscellaneous benefits can be offered through a campus store. Facilities for these services generally are lacking on a campus that has no store and are either not provided or provided elsewhere at additional expense.

Bookstore operations should be and are a profitable endeavor. Reasonable markup provides a sufficient return to cover operating expenses and to allow a fair margin of profit. The university may not desire to include this profit in its operating income because of possible criticism from the student body, but it can devote such profits to student purposes.

These student projects at times require considerable financial outlay. Profitable store operations can provide a large portion of the income required for these projects and thereby relieve the general university budget of this financial load. Of course, the university may relieve itself of this profit, if it does not desire to utilize it, by



providing a profit sharing plan to return the profit through a patronage dividend to its customers.

The institutional purchasing department will find the university owned store a valuable aid in procurement of supplies. Many products are offered for sale by suppliers at several price schedules. There are the retail price, the institutional price (which is somewhat lower than the retail price), and a dealer's price (which carries the largest discount). This is not true of all products a university requires, but a fair percentage will fall into this category.

When buying for university utilization the purchasing department commands the institutional price at best, but the store can buy as a dealer purchasing for resale purposes and thereby obtain the greatest discount. It is well to utilize the store for this type of purchase and then have the property transferred to the requisitioning university department. Large savings in cost can be effected in this fashion.

#### WORK FOR STUDENTS

The university will also find its store of considerable use in providing part-time jobs for students. After being given adequate training, students serve admirably as sales representatives; the store also proves an excellent training ground for those in retailing and marketing courses.

It should be kept in mind there are difficulties in the operations of an institutional bookstore. It is another business enterprise that must be supervised and managed. A manager and considerable personnel must be employed to afford proper service; space, a scarce item on many campuses, must be devoted to store purposes, and considerable investment must be made in a bookstore for inventory and fixtures. Of course, these requirements are essential to a business venture of any type.

There is a more serious problem that must be considered. This concerns the good will of the local businessmen. Because store operations constitute a profit making venture and university operation takes this profit opportunity from private enterprise, local retailers are deprived of what they sometimes regard as their legitimate opportunity and are likely to be hostile and unfriendly to the university. However, the university can keep these complaints to a minimum by confining its store sales to classroom books, supplies and equipment on the theory this is as

much a part of instructional processes as are the employment of instructors and provision of necessary classroom and laboratory accommodations.

There exist effort, risk and danger in every commercial venture, and operation of a bookstore is no exception. A university assumes this risk when it operates a campus bookstore, but certainly the advantages far outweigh the

disadvantages. University operation gives both student and faculty multiple benefits that make the assumption of risk and the expenditure of effort on the university's part practical and expedient. In addition, the university is enabled to perform its duties to both the student body and the faculty and to assume its rightful responsibilities in the most practicable manner.

### *Ridding the campus of*

## RODENTS AND INSECTS

THE CONTROL OF RODENTS AND insects on the campus of the State College of Washington is a function of the department of buildings and grounds, which works in close cooperation with the campus sanitarian, a member of the staff of the department of bacteriology. A well qualified older student handles this program on a part-time basis.

Our problem, which is probably typical of land-grant colleges, is complicated by the fact that our college farm, with its poultry areas, is very close to much of our temporary housing. In connection with this housing project, we have a cafeteria, also a temporary building, serving up to 1500 persons.

Working in close cooperation with the Federal Fish and Wildlife Service, we have obtained much advice as to methods and poisons from it. Our general methods and the poisons used for each of these pests follow.

#### CONTROLLING RODENTS

For controlling mice on the farm section of the college, strychnine sulfate on hard winter wheat has been effective. This is prepared by putting the strychnine into solution with water and pouring it over the wheat to obtain a 0.6 per cent final product. After drying the wheat in an electric drying oven, it may be spread as bait.

For controlling rats on the college farm, "1080" has been most effective. This quick acting and dangerous poison is used in conjunction with the Federal Fish and Wildlife Service. Another slow but quite effective poison used is ANTU. This is acquired in 100 per cent strength and then mixed

with a mixture of medium ground corn and fishmeal to a 5 to 6 per cent product that is used as bait close to the rat burrows and runs. ANTU is the only poison used around or close to the student housing project, which is adjacent to much of the college farm.

#### CONTROLLING INSECTS

For controlling cockroaches in kitchens and other places in which food is handled, we use one kind of poison spray, Chlordane. This hydrocarbon compound is acquired in 40 per cent emulsifiable concentrate and cut to a 4 to 5 per cent solution with either water or a kerosene with a low flash. This is applied with both a hand and power sprayer. Chlordane is effective for the type of cockroach (croton bug or German waterbug) found on our campus.

One kind of vapor is also used for cockroaches. This is a pyrethrum, DDT mixture in oil, which may be vaporized in a special vaporizer.

For controlling silverfish, 5 per cent Chlordane in oil or water applied in a spray is effective. For bedbugs, both DDT and pyrethrum dust are used because they can be applied while the quarters are being occupied. DDT and pyrethrum dust are used for controlling fleas for the same reason.

For controlling sparrows, the cause of much nuisance on the college farm, strychnine sulfate mixed with a small, hard variety of wheat to a 6 per cent final product is used as bait.—FRED G. ROUNDS, *superintendent, department of buildings and grounds, State College of Washington.*



## Management and financial policies in

# FOOD SERVICE

**MARY DeGARMO BRYAN**

Supervisor of Food Service  
Teachers College, Columbia University

CHARGES AFFECT AMOUNT AND QUALITY OF FOOD  
SERVED AT COLLEGES, WITH SOME STUDENTS UNABLE  
TO AFFORD AS MUCH AS THEY WOULD LIKE TO EAT.

FOOD SERVICE IS ONE OF THE LARGEST items in a college budget. From available figures it is likely that the colleges and universities of this country are spending a minimum of \$3,000,000 a day for food service. Food is certainly the largest single item in the college budget of any student, with the possible exception of the professional student.

Many business officers are responsible not only for the financial operation of the food service but also, directly or indirectly, for the quality, the nature of the whole undertaking. That is an extremely serious responsibility. Not only does it involve the No. 1 problem of the world today, which is food, but it also involves the No. 1 health problem of the young people of this country today, which also is food.

Studies of selection of food by college students show that in many cases they do not select and do not receive adequate food. Reasons may be financial limitations, lack of knowledge, poor or inadequate meals served by the college, or poor food habits. Prices for food in college food services may be too high for some students who cannot afford to buy as much as they would like to eat.

Many students come to college—and leave it—without any sound knowledge of nutrition and with poor food habits that will affect their health throughout life. Sometimes the meals served in our colleges are so lacking in palatability and attractiveness that students do not eat enough. Sometimes they are consistently low or lacking in some essential nutrients. It always has seemed amazing to me that colleges feed their athletes at a special table. There is nothing that athletes require that every other student in college does not require. They may need more of some nutrients, but any student should be able to meet his nutritional requirements at any college table.

Financial policies play a dominant rôle in management of the food service. For one thing, they determine charges and the charges affect the amount and the quality of food served to or bought by the students.

In response to a questionnaire sent out to business officers, 40 of the 61

From a paper presented before the Eastern Association of College and University Business Officers, Washington, D.C., December 1948.



institutions replying operate cafeterias; 41 operate dining rooms; 25 have both cafeterias and dining rooms. Of institutions having cafeterias, only 62 per cent are open seven days, 23 per cent are open six days, and 5 per cent are open five or five and one-half days. Dining room service is operated seven days in 75 per cent and six days in 7 per cent; five to five and one-half days in 18 per cent of the colleges. The smaller percentage operating cafeterias on a seven-day period is explained by the fact that the student population in many of these institutions is housed to considerable extent outside the college. In colleges having both cafeteria and dining hall services, many students are away for week ends.

In the cafeteria service, the average checks and ranges are: breakfast, 33 cents, ranging from 15 to 50 cents; lunch, 55 cents, ranging from 29 to 75 cents; dinner, 75 cents, ranging from 30 cents to \$1.10.

#### CHARGES VARY

Of the 38 colleges reporting dining hall rates, the average charge is \$11.08, the range, from \$5.60 to \$18.60, a variation of more than 300 per cent. One college reports room and board together at \$22.70.

The average food cost percentage of those reporting was 54.3; range, from 30 to 80 per cent. The college reporting the 80 per cent turned in a very brief report. It said, "Eighty per cent food cost; 33 per cent labor. We lost money." In the group reporting food percentages from 30 to 35 per cent there was a high rate of expenditure, from 32 to 45 per cent, for items other than food and labor.

Labor costs average 28.4 per cent and range from 11.5 to 62 per cent. There is wide variation in the items of expenses included in labor cost. Half of the colleges include administrative salaries. Only 33 per cent include employees' meals. A small group (20 per cent) includes compensation insurance, and vacation pay reserve (30 per cent). All other expenses ranged from 6.4 to 45 per cent. Profit averaged 4.6 per cent from minus 13 to plus 33 per cent.

Sixty-seven different account titles, in addition to food and labor, were listed as expenses charged to operation. Those occurring with greatest frequency were laundry, repairs, supplies, water, electricity and fuel.

Replies to the question on the use of a budget showed that 75 per cent

have a budget for food service; the remainder have no budget or did not reply. Sixty per cent operate on a budget for room service. It is of interest to note the failure in some institutions to use this valuable check on estimated income and guide for expenditures.

One-third of the colleges responding charge some part of the college administration expense to either board or room. There is no uniform basis for this charge. Most charges made are on the basis of the percentage of space occupied or the relation of income of the unit to the total income of the college.

One-half of the colleges have increased charges for food this current year, the increases ranging from 1 to 25 per cent, with an average of 10 per cent.

It is evident from the range of costs and accounts reported that when we talk of food cost, labor cost, and other operating costs, few persons are talking about the same thing. We are evidently dealing with a wide variety of financial policies as regards the larger plan of operation. It is likely that there is also variation in methods of control that may be reflected in costs.

The first requisite, therefore, would seem to be for each institution to set up a written policy for financing the food service. Such a statement would include (1) services to be provided

by general funds; (2) services to be provided through charges to patrons; (3) a plan of accounting (duties of the accounting office and food service management as related to this plan); (4) a chart of accounts that expresses the policy within the accounting plan.

#### FINANCIAL POLICIES IMPORTANT

Financial policies are important because they determine the type of management and charges made for the service rendered. Food service may be regarded as an important part of the health service, as a means for teaching good food habits through the service of adequate and attractive meals; as a center of much of the social life and social program of the college; as a good public relations medium, and—in colleges offering training in dietetics and institution management—as a classroom and laboratory.

With this philosophy of its function, it would seem reasonable that the college carry charges that it would carry for all other teaching and social spaces, such as capital outlay necessary to provide, furnish and equip the service, rent or equivalent, heat, light, power, water and a portion of supervisory costs. On the other hand, it may be considered a necessary service only, with sales expected to cover all operating costs and provide a profit.

The policy may establish a low profit or a high one, which is used to finance other college programs. One college reported the use of 45 per cent of its charge for board for such purposes; in some institutions the policy attempts to cover only costs of food and labor.

It is obvious that percentage distributions of income are comparable only if the chart of accounts is approximately the same in the colleges comparing these distributions. If agreement could be reached on major items of expense among institutions having similar financial policies, managers of food services would then be in a position to obtain valuable operating guides, and useful data would be available on which to base prices and charges to students, wage policies, and other management decisions.

Managers need norms against which to check their operations. Such norms are fairly well established in the commercial food service field, in which all operating costs, including rent, plus profit, are covered by sales. For example, commercial cafeterias aim at a food cost at the present time of from





43 to 45 per cent of the income, labor from 28 to 33 per cent. Service restaurants in the high priced bracket aim at a food cost of from 30 to 37 per cent; in the medium priced bracket of from 35 to 42 per cent, and in the low priced bracket of from 40 to 45 per cent. The wages in those service restaurants range from 27 to 30 per cent. If major items exceed these ranges, the operator usually goes out of business.

In school cafeterias, which are regarded as teaching laboratories, food cost averages 60 per cent and labor from 30 to 35 per cent. In these institutions, charts of accounts are similar in all important respects and many overhead costs, including management, are carried in the regular school budget.

Norms representing good management under several specific financial policies are greatly needed by managers of college food services. It may be possible to establish a ratio between two major items of expenditure, food and wages—for example, 2 to 1—which would serve as a yardstick against which individual operations may be studied and measured.

#### ASSISTANCE NEEDED

The assistance of the business officer is necessary within the food service department for the installation of a suitable system of records and of procedures to ensure maximum food cost control. Some of these are:

1. *Recipes Standardized for Content and Size of Portion.* These should be priced currently so that the manager knows the actual cost per portion of every item on the menu. With an established food cost percentage, the manager then knows exactly what it costs to serve each portion and can adjust prices on a sound basis.

2. *Production Order for Meal or Day.* This is based on standard recipes, allowing for seconds as required.

3. *Requisitions Based on Recipes and Production Order.* Spot counts using various devices and machines should check number of servings actually made.

4. *Daily Food Cost Report Showing Distribution of Purchases.* Distribution of such foods as meat, vegetables, fruits and bakery goods may be used to indicate nutritional adequacy of the food served since there are satisfactory norms for such an appraisal.

For example, if more than 34 per cent of the food expenditures are spent for meat, fish and poultry, the proba-

bility is that under present prices not enough fruits, vegetables and dairy products are being served. The ranges at the present time for important food groups are from 28 to 34 per cent for meat and poultry; from 20 to 25 per cent for fruits and vegetables (fresh, canned and frozen); from 20 to 25 per cent for milk and dairy products other than butter. (Butter is usually included in the remainder of the expenditure as one of the fats.)

But, more than that, this daily food cost report is an indispensable guide for operation. It should give the food cost percentage for the day and to date so that the manager knows her exact financial situation at all times and is in a position to adjust menus and purchases. It should be available to the manager within twenty-four hours.

In our operation we plan to keep the food cost percentage "to date" at from 48 to 50 per cent. The daily percentage will vary; it may run as high as 57 per cent one day and as low as 40 per cent the next, depending on the cost of the main foods or the menu. Our to-date figure keeps us on an even keel. Since other costs are relatively stable, we are on the safe side in our operation if we control the food percentage.

The advantage of a prompt daily food cost report is so great as a tool for management that it is good business for the business officer to see that accounting personnel provided the food service manager is adequate to provide such a report.

5. *Perpetual Inventories of Staples.* It may also be necessary to set up inventories of perishables if the institution is so located that these are bought at weekly or longer intervals. If purchased daily, they can be charged to operations on the day of delivery.

We charge meat to the day of consumption, though we may buy it for several days in advance. We put a tag on each item when it arrives; as a particular item is removed from the refrigerator for use, that tag is sent into the food controller's office for charge to that day.

6. *Physical Inventories of Stores.* These may be taken monthly or at longer intervals. Some managers take the physical inventory of items whenever replacements are purchased. Frequent turnover is desirable in staples as in perishables, and this method serves as a running check on stores.

7. *Specifications for All Foods.* To purchase on specification only and on

the basis of prices from several firms is good buying practice. All foods should be weighed and inspected by competent persons on delivery. Specifications are of value only if the person receiving food has sufficient knowledge to check them against the standards stated at the time of ordering. Much money can be saved by buying by weight and on specifications that include weight, and by weighing all foods so purchased.

#### CHECK SIZE AND QUALITY

Check weights of cases of eggs and bags of cabbages, as well as meats. Reject overweights in meats when orders are placed on the basis of standard portions. Specify and check size and quality.

8. *Adequate Personnel Records and Procedures.* These are as important in controlling costs as are foods records. Classification of employees, fair rates for each classification with minimum and maximum rate within each, careful job descriptions on which to select suitable employees, tight scheduling, good supervision, and training to develop maximum efficiency are several effective means of control.

It is important to emphasize the point that good supervision pays. Trained supervision prevents waste of food because of careless preparation or preparation so far in advance of service that the food is probably not palatable and is likely to have lost a considerable portion of some nutrients by the time it is served.

9. *Equipment Records.* Equipment at the present time is very expensive. It is important to keep adequate records of each piece of equipment, showing not only the description, catalog number and original cost but also the date, type and cost of all repair to the equipment. These records prove illuminating guides in the purchase of new equipment. Records of repair costs may also show the advisability of outlays for replacement, rather than constant maintenance expense, or for a new type of plan even at considerable investment.

10. *Usual Records and Procedures for Cash Control.*

We do not operate on a profit basis at Teachers College because we feel that the most valuable thing we can do for our students is to make it possible for them to buy good food at the lowest possible prices. We have not increased prices except on some desserts, which are something of a luxury.

## LAUNDRY AND DRY CLEANING



M. M. CHAMBERS

American Council on Education

AMONG THE SEVERAL INSTITUTIONS governed by the regents of the University System of Georgia is the State College for Women at Milledgeville. There, the regents operate a laundry and dry cleaning establishment in a state owned college building.

The college catalog states that the service is available to students at "regular commercial rates," but actually it appears that the prices are lower than those charged by privately owned shops of the same type in the community. The reduced-price service is offered not only to students of the college but also to faculty members and former faculty members, other employees, a member of the board of regents who lives in the community, and all their families.

### MEETS OPPOSITION

On this state of facts, proprietors of commercial laundries and dry cleaning shops in the vicinity joined in a petition to enjoin the regents from operating any of the service other than laundering for boarding students at the college and institutional flatwork, such as sheets used in residence halls and the table linen used in the dining halls.

Among the arguments made by the plaintiffs were the following:

1. It is "unfair" for a service of this kind to occupy a state owned building rent-free and pay no business license fees or taxes.

2. The plaintiffs have ample facilities to handle all the laundry and dry cleaning business of the entire community, and the operation of the college laundry, taking away a part of

their patronage, is a taking of property without due process of law, as forbidden in the federal and state constitutions.

3. The college uses this reduced-price service as an inducement, of real and substantial monetary value, in hiring faculty members and other employees, and since the regents do not operate a similar service at the other state institutions of higher education under their control, faculty members and employees of the other institutions are victims of unconstitutional discrimination.

4. The member of the board of regents who gets his laundry done at cost violates the statute that limits his compensation to \$7 a day while attending board meetings and actual cost of transportation to and from such meetings.

5. When the college agrees to pay for lost articles up to ten times the laundry charge and to accept higher valuations if declared in advance, it thereby contracts a debt against the state, in contravention of the constitution.

Lest anyone take these contentions seriously, let us prolong the suspense no farther, and note that the supreme court of Georgia swept them all aside and held that the net effect of the allegations was zero. In more dignified words, the petition failed to state a cause of action.<sup>1</sup>

The gist of the court's opinion may be conveniently set forth in a roughly corresponding series of propositions:

<sup>1</sup>Villyard et al v. Regents of University System of Georgia (Ga.), 50 S.E. 2d 313 (1948).

1. Decisions in several states have held that a college, state or private, has a right to operate any service reasonably necessary to make the campus a healthful, sanitary and convenient dwelling place; that such services may be offered to students, faculty and employees, and to occasional friends and guests of any of these persons, and, within reasonable limits depending upon the local circumstances, to the general public. Service to the general public must be an incidental and not the main purpose of the establishment.

2. The federal and state constitutions do not guarantee anyone a monopoly in a private business, and a college is free to operate in the best interests of its students even if this results in the ruin of a local private business.

3. As to the alleged discrimination against faculty members at other state institutions in Georgia, the point was not decided and need not be, because the plaintiffs were not in a position to raise it. Such a question is not properly before the court unless brought by one who alleges that he or a member of his family is a victim of the discrimination complained of.

4. As to the member of the board of regents who got his laundry at cost, the court wasted no words but declared flatly that there was no violation of the statute.

5. As to an alleged "debt against the state," the court pointed to its own ruling in an earlier case involving the same issue, wherein it explicitly said: "The regents of the University System of Georgia is a distinct corporate entity and is governed by a board of regents. Through the board it can exercise any power usually granted to such incorporations, necessary to its usefulness, and not in conflict with the constitution and laws. *An obligation incurred by the corporation, or the board of regents, is not a debt of the state, and therefore is not affected by constitutional limitations upon state indebtedness.*"<sup>2</sup>

### COURT REAFFIRMS OPINION

In the present case the plaintiffs asked the court to overrule or to modify the earlier decision just quoted. The court refused the request and expressly reaffirmed the earlier opinion in all respects.

<sup>2</sup>State v. Regents of University System of Georgia, 179 Ga. 210, 175 S.E. 567 (1934).



# Questions and Answers

## Painting Over Paint

**Question:** Is it possible to put a layer of paint of the highly washable alkyd resin type over a coat of the so-called water emulsion paint?—M.E.W., Mass.

**ANSWER:** Alkyd resin paints can be put over water paint film provided there are not many coats of the latter.

It would be wise to experiment with one room. If a number of coats of casein or casein-emulsion paint have been applied, a layer of material has accumulated which does not have great cohesion and which is somewhat porous. When a regular paint is built up over this, there finally arrives a point at which something lets go underneath and the paint begins to come off in irregular areas. This is not peculiar to alkyd resin paints but applies to flat or semigloss wall paints from any manufacturer if they are applied over casein.

Where thick layers of water emulsion paints exist, it would be well to try to remove them with a strong solution of alkali. Rubber gloves and enamel buckets should be used. The surface should be scratched vigorously with wire brushes and then rinsed to remove the paint thus loosened and also the excess alkali.—E. W. JONES.

## Laundry Problem

**Question:** What factors should be taken into consideration in the development of open formulas of alkalies and sours for use in institutional laundries?—E.G.C., Md.

**ANSWER:** There are certain general formulas that could be recommended but it is necessary that a study be made of local conditions, the most important of which is the water supply. No two sources of water are alike and, consequently, must be analyzed for hardness, both temporary and permanent, as well as the amount of soap consuming compound, either soluble or insoluble, in suspended matter. In addition, the parts per million of bicarbonates are most important in determining the type of alkali and sours to be used.

Decision should be made as to the kind of soap to be used, whether it is to be a fatty acid (natural soap) or a synthetic, which is also coming into

general use. Another factor is the type and degree of soil to be removed, and the fabrics (white or colored) must also be considered.

I would suggest that contact be made with the American Institute of Laundering, Joliet, Ill. It has basic formulas to recommend. Different localities will pose different local problems to be solved.—GERALD J. HOAR, *manager, laundry and dry cleaning department, University of Notre Dame.*

## Handle With Care

**Question:** We have been advised that disposal of burned-out fluorescent light tubes should be conducted with great care to avoid injury. What is the danger involved?—H.H., Ill.

**ANSWER:** While fluorescent tubes in use are not dangerous, and there should be no prejudice against their installation, hazards do exist when the tubes are broken. Poisoning may result from inhalation of the beryllium phosphor coating of the tube which is exposed when the glass is shattered, but the greater hazard to guard against is a flying fragment piercing the skin, since phosphor powder clinging to the glass is readily absorbed by the bloodstream and will prevent the healing of the wound.

As a practical safety measure, the worn-out tube, before being discarded, should be placed in the carton containing the replacement. Care also should be taken to see that the box does not protrude from the trash can or some other receptacle in such a way as to be easily smashed.

For the large institutional user who occasionally must destroy the burned-out lamps in quantity, several precautions should be taken before smashing fluorescent tubes. Among them are the following:

1. Goggles or other safeguards for the eyes should be worn to provide the greatest protection possible from flying glass.

2. Sturdy gloves should be worn.

3. When smashing small numbers of lamps, they should be broken out of doors, preferably in a waste container or in a waste disposal area.

4. Operators should stand with the wind at their backs so that toxic dust and vapors are blown away from them. Each operator, if possible, also should be equipped with an approved respirator.

5. Lamps also may be broken under water in a barrel or trough, so that dust does not enter the air and danger of flying glass is eliminated.

6. When large numbers of lamps are to be smashed indoors, a ventilated hood should be used to draw dusts and vapors out of the building, and an isolated room should be chosen for the location of this hood.

7. Final disposal of the broken lamps should be made so that the public is protected from dangerous exposure. Lamps should be buried in a dump or deposited under water being used for disposal of industrial wastes, so that the dusts cannot be disturbed and distributed throughout the community.

8. Any person who has a wound exposed to beryllium compounds should be placed under the immediate treatment of a physician.

As far as the general public is concerned, an intelligent awareness of the danger is an effective safeguard against this type of hazard. It would be as foolish to discard the use of fluorescent lighting because certain hazards are attached to it as to go back to oil lamps because one can suffer a shock from electricity. Simple precautions are all that are necessary to make both forms of lighting safe.—JOHN V. GRIMALDI, *industrial safety director, accident prevention department, Association of Casualty and Surety Companies.*

## Square Feet per Hour

**Question:** How many square feet per hour should be expected from a reasonably good workman in painting walls?—B.D.T., Idaho.

**ANSWER:** In painting a fairly large open surface, a reasonably good workman using a high grade of flat wall paint should cover between 250 and 300 square feet per hour. A really hard-working painter might well cover as much as 350 feet per hour.—E. W. JONES.



# NEWS

Van Dyke to U.S. Office of Education . . . Columbia Sets Retirement Ages . . . Hoover Commission and Task Force on Education Widely Divided . . . Program Features of Food Service Institute . . . Summer School Vets Need New Type of Certificate

Washington Correspondent: BEN BRODINSKY

## George E. Van Dyke to Office of Education

George E. Van Dyke, treasurer of Syracuse University, has been named as specialist in college business management in the U.S. Office of Education. He assumed his duties on April 1 in the division of higher education, directed by Dr. John Dale Russell. He will work under the general direction of Dr. Ernest V. Hollis, chief of college administration.



G. E. Van Dyke

Mr. Van Dyke received B.S. and M.S. degrees from the University of Illinois. Before he became treasurer of Syracuse University, he served as secretary and treasurer of Case Institute of Technology, Cleveland. He was the first director of the Financial Advisory Services in the American Council on Education, Washington, D.C., in 1935-36, and served as technical secretary of the National Committee on Standard Reports for Colleges and Universities from 1933 to 1935. He has just returned from Japan as civilian consultant for university business and financial administration.

## New Bill Would Give Surplus Property to Higher Education

WASHINGTON, D.C.—Civilian departments of the federal government would be authorized to donate surplus property to colleges and universities under a bill vigorously supported by Washington educators.

Under existing law, only the National Military Establishment may donate excess property for education.

Spokesmen in Washington point out, however, that the Departments

of Agriculture and the Interior, Atomic Energy Commission, Maritime Commission, Civil Aeronautics Administration, and other agencies frequently have surplus items useful to college laboratories, shops and offices. The proposed bill (S. 859) would expand the donations program to the entire federal government.

It is not likely, however, that the civilian agencies of the government would yield as much property as the military establishment. Under the present donations program, army, navy and air force bases have turned over to schools a total of \$7,000,000 (acquisition value) worth of property a month. This property is spotted by a nationwide corps of 500 "accredited assistants" from state educational agencies for surplus property. In turn, the Office of Education surplus property division allocates the items among public and private schools, colleges and universities in all regions.

The most recent "find" consisted of many million dollars' worth of electric wire, which was put to use by many institutions for wiring college buildings and shops and lighting football and baseball fields for night games.

College executives are advised "to keep in touch perpetually with their state agencies for surplus property," if interested in donations. These units are usually located in the offices of the state departments of education.

## Protests Discrimination

•CAMBRIDGE, MASS.—The Massachusetts Institute of Technology's Alpha Zeta chapter of Alpha Chi Sigma, chemical society, has voted to send its charter back to the national organization and disband the chapter. This action was taken in protest against discriminating by-laws in the society's constitution forbidding membership to Jewish, Chinese, Indian, Negro and certain other student groups.

## Columbia University Establishes Retirement Ages for Staff Members

NEW YORK CITY.—Columbia University's trustees have adopted new statutes that establish automatic retirement ages for academic and administrative staff members, according to a recent announcement by Albert C. Jacobs, provost of the university.

The age limits will be 65 for administrative officers and 68 for academic officers. Administrative officers who have reached the age of 65 before June 1, 1950, will retire on June 30. Administrative officers who reach 65 on or after June 1, 1950, will retire at the end of the month in which they attain that age.

In the case of academic personnel, the dates of September 30, January 31, and May 31 have been set as retirement days for those who reach the retirement age of 68 in the four months preceding each of those dates. All academic officers who have reached 68 before June 1, 1950, will retire from active service on June 30. An additional provision permits any administrative or academic officer to retire after reaching the age of 63, upon request to the university president.

However, to guard against loss to the university of a staff member whose work is at a stage demanding his immediate presence, it has been provided that a "retired officer of administration or instruction may be appointed by the trustees to render special services to the university." Such special appointments will be for periods of not more than one year, and subject to renewal.

It is understood that in many cases administrative officers reaching the retirement age of 65 will be enabled to return to teaching duties in the department in which they had been active before becoming administrators.

## NEWS

### Hoover Commission and Task Force on Education Disagree

WASHINGTON, D.C.—The wide split between the Hoover Commission and its task force on education is the talk of the Washington educational colony.

The commission either ignored or reversed nearly all task force recommendations on education. In addition, Dr. Hollis P. Allen of Claremont College in California, task force head, complains that, as published, his report had been "mutilated and cut by a third." Hoover Commission spokesmen reply that all task force reports were edited in the interest of brevity.

As presented to Congress, the task force report recommends:

1. Reexamination of the farm extension service: Nearly all federal funds for adult education go to the farm population. Demands by other special groups, notably labor, for a special education service "is a dangerous tendency." The task force recommends general adult education programs for the entire population through university extension courses.

2. More balance in research: The task force finds that of the \$160,000,000 in federal funds to be spent for research in 1949, nearly all is for military or technical fields. More consideration should be given to research in social sciences.

3. Wider dispersion of research funds: Federal funds for research go to the big institutions, especially those in the Northeast and Midwest. This process widens the gap between weak

and strong institutions. Research funds should be dispersed as widely as possible throughout the colleges and universities in the country.

4. More support for the higher education division of the Office of Education: The federal government spends hundreds of millions of dollars each year through higher educational institutions for special purposes, yet the only clear-cut case of federal interest in the general and well rounded development of higher institutions is limited in 1949 to the \$167,000 which it has made available for the division of higher education in the Office of Education. That the amount is so small in relationship to the vast amount expended through these institutions for special causes and groups "raises the question as to whether the division can be effective as a balancing force to higher education."

### Pomona College and M.I.T. Agree on Plan

CLAREMONT, CALIF.—Pomona College and Massachusetts Institute of Technology have reached an agreement on a five-year plan leading to degrees from both institutions.

Students enrolling under the plan will spend three years at Pomona College and then will transfer without examination, on recommendation of the science faculty, to M.I.T. for the final two years. Pomona will give a bachelor of arts degree and M.I.T. a bachelor of science degree under this agreement.

Twelve other liberal arts colleges are enrolled under this plan.

### Teachers Strike at Putney School

PUTNEY, VT.—Twenty-four teachers went on strike at the Putney School over the question of teachers' rights and their demand for an official salary schedule.

The present labor dispute has excited the concern of many parents who have been holding meetings on the subject in several cities. The school, with a program stressing farm work in place of conventional athletics, has attracted students from prominent families in all parts of the country. Among recent students have been children of Paul Hoffman, administrator of the Economic Cooperation Administration, and Dr. James B. Conant of Harvard University.

According to Edwin Smith, a faculty member who has been acting as a representative for the striking teachers who are members of Local 808, United Public Workers of America, C.I.O., the trouble dates back to last November when teachers formed the Putney Faculty Association as a "forum" for discussing academic problems.

Mrs. Sebastian Hinton, president of the Putney School, objected to the organization, which led in February to the establishment of the C.I.O. local on the 850 acre farm campus. This step, in turn, led to the strike. The 12 nonstriking members of the faculty carried on classes for the 167 students during the four-day strike.

Mr. Smith stated the strike had followed administrative silence on the demands of the union for a voice in policy-making and for the granting of four points: (1) that the union be recognized; (2) that a timetable of contract negotiations be drawn up; (3) that a March 25 deadline for decisions by faculty members on jobs for next season be withdrawn; (4) that all union members be offered employment next year.

### Contributes \$5000 for Chapel Building Fund

BOWLING GREEN, OHIO.—A small chapel for use by all religious faiths will be built at Bowling Green State University, President Frank J. Prout announced recently. University trustees had unanimously approved the project after Sidney Frohman, Sandusky paper manufacturer, contributed \$5000 to start the building fund.

### PROGRAM FEATURES OF FOOD SERVICE INSTITUTE

Program details are moving forward rapidly for the 1949 Food Service Institute being sponsored jointly by Northwestern University and College and University Business at the Knickerbocker Hotel, Chicago, July 25 to 27. Registrations for the institute are being received daily; registration is limited to 125 delegates—first come, first accepted.

Food service leaders who will appear as "faculty" on this year's program include: Jerome A. Gottschalk, manager of supervisory development, Hotpoint, Inc., on "Supervisory Training"; Christine Ricker, director of dining halls at Stanford University, on "Use of Student Labor"; Wendell G. Morgan, director of service enterprises at Howard University, on "Better Food Cost Control"; Lee Burns, director of residence halls at the University of

Wisconsin, on "Good Food Service House-keeping Saves Money"; George Horner, University of Iowa architect, on "Color, Decoration and Lighting," and many others.

Registrations received to date include representatives from colleges on the Atlantic and Pacific coasts, as well as delegates from the Middle West and South. College administrators are requested to limit representation to two delegates so that a larger number may be represented.

Registration checks of \$15 each should be made payable to "Food Service Institute" and forwarded to Willard Buntain, director of dormitories at Northwestern University, Evanston, Ill. Please do not make checks payable to Mr. Buntain, Northwestern University, or College and University Business.



## Congress Stalls on Federal Aid to Higher Education

WASHINGTON, D.C.—The Truman administration will sponsor no legislation affecting colleges and universities until the second session of the 81st Congress, that is, January 1950.

It was learned that administration high strategy calls for withholding approval or stalling on higher education proposals during the current session in order to concentrate all attention in Congress on the federal aid for elementary and secondary schools.

That is the reason the Bureau of the Budget has delayed approval of the study on the need for federal college scholarships, first suggested by the White House in January. At the time of going to press it appeared that no such study will be started this year.

Instead, the White House may call only for a "memorandum of information" from the Office of Education on the need for scholarships and other student aid proposals. This memorandum, or a bill based on it, would be submitted to Congress in January 1950, according to present plans.

Another reason for blocking the study on college scholarships needs, observers believe, is that the N.E.A.'s department of higher education is completing an independent study on the need for federal aid to higher education. The report, when released early in June, will cover opinions of college executives for federal aid for capital outlay, scholarships, current operational costs, loans for new plant construction, loans to students, and the advisability of federal grants for "unspecified or general purposes."

## Board of Trustees Takes Over N.Y. State University

ALBANY, N.Y.—The State University of New York came into physical existence on April 4 as the board of university trustees formally took over from the board of regents the administrative control of 32 teachers colleges and other state institutes with enrollment exceeding 30,000 students.

Dr. Oliver C. Carmichael, chairman of the board, stated that it would be a cardinal purpose of the trustees to "supplement, not supplant" privately supported colleges and universities. Rather than set up a competing in-

stitution, where adequate facilities already existed, the trustees would recommend scholarship help to assist deserving students in overcoming economic barriers.

Dr. Alvin C. Eurich, former vice president of Stanford University and now president of New York State University, stated that the purpose of the new university is to "furnish appropriate educational opportunities for the qualified youth of this state" regardless of "economic status and place of residence, both of which now constitute serious barriers to college attendance."

## Vets Attending Summer School Must Have New Type of Certificate

WASHINGTON, D.C. — Veterans planning to go to summer school under the G.I. bill should make necessary arrangements for Veterans Administration certificates of eligibility. A veteran already in school under the G.I. bill who intends to continue his education this summer in a different school should apply for a supplemental certificate of eligibility immediately.

If a veteran is not presently in training but holds an unused certificate of eligibility issued before Sept. 1, 1948, he should exchange it for a new type of certificate if he plans to enter school this summer. A veteran not having a certificate of any kind who intends to enroll in summer school should apply for one at his nearest V.A. office. He will be issued the new type of certificate when he meets necessary eligibility requirements.

Veterans now in school under the G.I. bill must have supplemental certificates before they can be admitted to new schools or courses, V.A. said. Application forms for the certificates may be obtained from the registrar's office at their school or from any V.A. office. After a veteran has filled out the application, he should send it to the V.A. regional office having jurisdiction over the school he now is attending.

Veterans not now in school, who hold certificates of eligibility issued before Sept. 1, 1948, may mail them to any V.A. office to exchange them for the new certificates. V.A. emphasized that the certificates need not be exchanged in person.

## 60 Per Cent of Vets Apply for Training

WASHINGTON, D.C.—Ninety-eight per cent of the World War II veterans who have entered training under laws administered by Veterans Administration are eligible for additional training, according to V.A.

By Jan. 31, 1949, a total of 6,228,707 veterans, at one time or another, had entered training under the G.I. bill and Public Law 16. Of these, 5,749,023 had trained under the G.I. bill and 479,684 had enrolled under P.L. 16.

On that date, only 61,406 former veteran-students and trainees had exhausted their entitlement to further G.I. training, while 81,892 disabled veterans had been declared rehabilitated under P.L. 16.

Of the 6,228,707 who had entered training since the inception of both laws, more than one-third, or 2,476,090, were enrolled in schools, colleges, institutional on-farm training courses, and on-the-job training courses on January 31. The trainees included 2,249,877 enrolled under the G.I. bill and 226,213 training under P.L. 16.

Sixty per cent of the nation's 15,081,000 World War II veterans had submitted applications for training under the two laws by the end of January 1949.

## 318,749 Degrees to College Students

WASHINGTON, D.C.—Exactly 318,749 degrees were conferred by colleges and universities in the United States during the year which ended June 30, 1948.

In the first tabulation of its kind, the Office of Education reported that 1214 higher educational institutions granted degrees to 208,581 men and 110,168 women. Privately controlled institutions conferred 163,293 degrees; public institutions, 155,456.

The number of bachelor's and first professional degrees conferred totaled 272,144; master's degrees, 42,417; doctor's degrees, 4188.

Institutions granting the largest number of bachelor's degrees included: University of California, 7103; University of Minnesota, 5435; New York University, 5295; University of Illinois, 4395; University of Michigan, 3768. Harvard awarded the largest number of doctor's degrees—310.



## Students Arrested in Protest Strike Against Professors

NEW YORK CITY.—The campus of the City College of New York was the scene of a student strike that originally involved a large number of student pickets, estimated at one time to be as many as 500. The strike broke out as a protest against alleged racial and religious discrimination by Prof. William E. Knickerbocker, chairman of the department of romance languages, who was accused of anti-Semitism, and William C. Davis, economics instructor, who is declared to have refused to allow white and Negro students to share residence halls when he was in charge of Army Hall, which houses student veterans.

In an attempt to bring order to the campus, police were ordered to the scene, and patrolmen and mounted police arrested 17 pickets and charged 16 of them with disorderly conduct, the other being charged with third-degree assault.

Dr. Harry N. Wright, president of the college, issued a formal statement saying he would firmly resist pressure. He is quoted as follows: "Prof. Knickerbocker and Mr. Davis have been exposed to the orderly processes of investigation, and action was taken where justified."

According to the administration, attendance at classes was reported to be 85 per cent at the highest point of the strike. Students claimed that at least 50 per cent had been absent when the strike first began.

The strike was ended after five days of agitation, but not until assurance from Albany that Francis T. Spaulding, state education commissioner, would conduct a formal hearing in the case of Prof. Knickerbocker.

The student strike was criticized editorially by the *New York Times*, which stated in the following terms: "The strike, at times riotous and disorderly, by which students at City College are trying to force the dismissal of two teachers is a misguided, unintelligent choice of method which can only bring disrepute upon the student body and damage to the good name of the college. Its professed and doubtless sincere aim is to protest and punish real or fancied racial or religious discrimination, but the method is that of indiscriminate acceptance of

charges of guilt which have been either repudiated by painstaking official inquiry, in one case, or suitably penalized in the other."

Robert Zuckerkandle, editor-in-chief of the *Campus*, an undergraduate weekly newspaper, resigned as a protest of his paper's support of the strike. Although in agreement with the aims of the strike, Zuckerkandle condemned it as "stupid, senseless and fumbling" and as a move that "has brought and will continue to bring great discredit upon the college."

## Charter Ships for College Students

WASHINGTON, D.C.—In a joint announcement, the U.S. State Department and the Maritime Commission said that three former troop ships of the C-4 class have been chartered to the United States Lines for student and professor travel during the coming summer.

The entire educational travel program will be in charge of the Council on Student Travel, 156 Fifth Avenue, New York 10. Applications for space should be addressed to John Rosengrant at that address.

Eastbound sailings will begin May 12 from New York to Plymouth and Le Havre and will continue through September 6. Eastbound sailing dates include, also, May 20 and 26; June 7, 14 and 22; July 1, 8, 19 and 26; August 2, 12, 19 and 26. Westbound sailing schedule includes: August 6, 13, 23 and 30, and September 6 and 17.

To England the minimum rate is \$175; the maximum rate is \$195. To France, the minimum is \$190; the maximum, \$210.

## Revises Retirement Plan for Employees

NEW YORK CITY.—The Cooper Union has revised its retirement plan for employees so that it now ranks with the best among colleges and universities in the country, Dr. Edwin S. Burdell, the director, announced recently.

Under the revised plan, the institution will contribute an amount equal to 10 per cent of every employee's salary toward his retirement, while the employee will contribute 5 per cent. Previously, the institution and the employees each contributed 5 per cent.

## Columbia Inaugurates a New Film Service

NEW YORK CITY.—Establishment of a new public service to be known as Columbia University Educational Films and to be operated by Columbia University Press was announced recently by Charles G. Proffitt, director of the press. A department of the service, serving the university only, will be designated Audiovisual Communication Center.

Herbert R. Jensen, formerly director of research for National Educational Films, Inc., has been named manager of both services. During the last year Mr. Jensen has been conducting a survey preparatory to setting up the two departments.

Educational Films will include among its services a film rental library designed to provide educational motion pictures for universities, colleges, schools and civic groups. Columbia produced films will be available to institutions anywhere in the world. The catalog at present lists films relating to medicine, teacher education, geography, health education, sociology and mechanical drawing.

The Audiovisual Communication Center will provide for the university such services as motion picture photography, projection and recording services, charts and filmstrips and, in addition, will handle film rentals for the various university departments.

## Warns Education Faces U.S. Thought-Control

LEXINGTON, VA.—At the 200th anniversary celebration of the founding of Washington and Lee University, Dr. Harold W. Dodds, president of Princeton University, warned that education in the United States is "facing a growing threat of government thought-control."

Dr. Dodds, speaking in historic Lee Chapel at convocation exercises attended by officials of 114 colleges and universities, pleaded for the preservation of privately endowed liberal arts colleges as a mainstay of the nation's freedoms.

The address was marked by caustic criticism of the recent report of President Truman's Advisory Commission on Higher Education, which, he declared, "charged that colleges like Washington and Lee are too 'oriented to the intellectual.'"

## Millions for Research on College Campuses

WASHINGTON, D.C.—The National Military Establishment will spend \$530,000,000 during the fiscal year 1950 for research to be carried through on American campuses and nonprofit research institutions on a contract basis.

For the first time, the air force receives an independent authorization for research. It totals \$233,000,000. The navy will receive \$144,506,000, and the army slightly more than \$252,000,000.

The House appropriations committee made clear that it expects the research and development board, under the Secretary of Defense, "to carefully consider the many research and development activities and to keep a close check to see that as little duplication as possible occurs."

This action of the appropriations committee is in line with Hoover Commission recommendations. The Hoover task force which studied the military establishment added that research "in human resources is quite as important as in the field of inanimate objects."

At present the armed services are spending only 1 per cent of the research funds for human-resource problems. "The importance of social and human relations problems would seem to justify a larger effort," the Hoover Commission task force on the military said.

## Educators Protest Raising Postal Rates

WASHINGTON, D.C.—Strong protests from educators against raising of postal rates on publications and catalogs issued by educational institutions are having their effect in Congress.

Private comment from Congressmen studying the drastic bill (H.R. 2945) to raise postal fees on educational and other matter is to the effect that schools and colleges will continue to have preferred rates. Some increases will be enacted for noneducational materials, but even these will not be as high as proposed under the bill, members of the House and Senate post office committees admit.

Eloquent spokesman for education during committee hearings was Joy Elmer Morgan, editor of the *N.E.A. Journal*. In his testimony, Dr. Morgan

said: "There are many nonprofit organizations and agencies, including some 1700 colleges and universities, which have a flat rate of 1½ cents a pound on their periodicals. The budgets of their journals, bulletins and catalogs are based on this rate. Under H.R. 2945, these nonprofit agencies would lose that special rate and at the same time be subjected to the increases proposed for commercial periodicals. This double increase for our educational and religious press would work a severe hardship and would tend to reduce the effectiveness of our educational and religious institutions at a time when they should be strengthened."

Dr. Morgan pointed out that the proposed rates are especially high for zones far from Eastern publishing centers. For example, a publication which now requires only 13½ cents postage from Washington to the Pacific Coast would require, under the proposed bill, 40½ cents the first year and 61 cents the second year.

## Three Faculty Members Ousted; Charge Heresy

BOSTON.—Three faculty members of Boston College have recently been dismissed for insisting on teaching "ideas leading to bigotry and intolerance," according to an announcement by Rev. William L. Keleher, S.J. President Keleher stated that the three college faculty members were employed to teach philosophy or physics and that they had been told to leave theology to those who were adequately and competently prepared.

The three faculty members objected, and they carried their objection to the Vatican by stating that Boston College students were taught the following things:

1. There may be salvation outside the Roman Catholic Church.
2. A man may be saved, though he does not hold that the Roman Catholic Church is supreme among churches.
3. A man may be saved without submission to the Pope.

The faculty members involved in the controversy stated that they were summoned to Father Keleher's office and told to withdraw their accusations of heresy and "conscience violation" or lose their jobs; they were dismissed when they refused.

## Seek Federal Aid for Health Training

WASHINGTON, D.C.—Four Democratic senators introduced a new bill seeking federal assistance to schools of medicine, dentistry, dental hygiene, nursing, public health, and sanitary engineering. Sponsors of the new measure are Senators Pepper (Fla.), Murray (Mont.), Humphrey (Minn.) and Neely (W. Va.).

"We are going to press for immediate consideration of our bill by the Senate. We can no longer sit back and let American citizens in ill health go unattended for the want of qualified and trained persons in the health field."

S. 1453 provides:

1. Federal grants to help finance cost of instruction. A medical or other school named in the bill would get \$300 per student for the present average enrollment and \$1700 for every new student. The difference in sum is explained by the fact that the schools would need more money to hire new instructors for additional students than they require for their present enrollments.
2. Federal grants for construction and equipment of up to 50 per cent of their cost.
3. Scholarships for all types of healing sciences. The federal government would finance the scholarships through a \$50,000,000 a year grant-in-aid to the states.
4. A special \$15,000,000 a year program to train nurses to be administered through the Federal Security Agency.
5. The entire federal aid program for the medical sciences is to be supervised by a National Council of Education for the Health Professions.

## Collegiate Drinking Subject of Research

NEW HAVEN, CONN.—The alcohol studies division of Yale University's laboratory of applied psychology recently released questionnaires to 80 colleges in an inquiry to determine the drinking habits of students.

The research is being conducted by the division because it believes there have been too many wild tales of drinking among students and it wants to set the record straight. The researchers will attempt to discover why some students drink.



## NAMES IN THE NEWS



W. S. Litterick

Dr. William S. Litterick has been appointed acting headmaster of the Peddie School, Hightstown, N.J. He succeeds Dr. Wilbour E. Saunders, headmaster

at Peddie for 14 years, who was appointed president of the Colgate-Rochester Divinity School, Rochester, N.Y.

Louis V. Phelps, treasurer of Grinnell College since 1921 and secretary of the board of trustees since 1926, recently submitted his resignation in order to accept a position with the Grinnell Ahrens Manufacturing Co.

Robert E. Frederickson, comptroller of Hobart and William Smith Colleges since September 1946, resigned recently. Dr. H. Newton Hubbs, treasurer of the college, will assume in addition the comptroller's duties.

John W. Teele, director of student placement at Harvard University, has also been appointed director of personnel. Mr. Teele, who continues in his present position, succeeds Gladys McCafferty, director of personnel relations since 1935.

Catherine E. Harpster has been named director of food service at Drake University to succeed Ursula Prater. Miss Harpster was for five years dietitian of

St. Mary's College of Notre Dame and prior to accepting her Drake University position was associated with the school system of South Bend, Ind., as dietitian. Other appointments at Drake include that of Margaret Webb as manager of the cafeteria and snack bar, and June Strate as assistant dietitian, who will be in charge of the women's dining hall.



C. E. Harpster

Louis H. Fitch, business manager of Baldwin-Wallace College, has been named business manager of Wittenberg College, Springfield, Ohio, and will begin his duties there July 1. The position of business manager at Wittenberg has been vacant since the resignation of A. R. Brane Nov. 1, 1947. Except for three years during the war, Mr. Fitch has served Baldwin-Wallace College since 1928 as bookstore manager, auditor, assistant treasurer, and business manager.



L. H. Fitch

Maurice J. Timlin, purchasing agent for Providence College, has been appointed director of placement at Dominican College.

Charles Seymour, president of Yale University, announced recently that he will retire on July 1, 1950. The announcement was made more than a year in advance in order that the Yale Corporation might have "ample opportunity for studied consideration in the choice of a successor."

Mother Marie Helene has been named president of St. Mary-of-the-Woods College, Indiana, and Superior General of the Sisters of Providence. She succeeds the late Mother Mary Bernard, who died in 1948.

Dale H. Gramley has been named president of Salem College, Winston-Salem, N.C., to succeed Bishop Howard E. Rondthaler. Bishop Rondthaler will retire July 1.

Rev. John H. Fray, Lutheran minister of Shepherdstown, W.Va., has been named president of Marion College, Marion, Va. He will succeed Rev. Henry E. Horn.

Riley B. Montgomery, president of Lynchburg College in Virginia, has been named president of the College of the Bible, Lexington, Ky. He will assume his new duties July 1.

Paul J. Furnas, comptroller at Earlham College, Richmond, Ind., has been named administrative vice president of the institution.

Rev. Selden Dee Kelley, president of Olivet Nazarene College, Kankakee, Ill., died recently of a heart attack. He was 51 years old and had assumed the presidency of the college last fall.

## DIRECTORY OF ASSOCIATIONS

### Association of College and University Business Officers

#### Central Association

President: Herbert Watkins, University of Michigan; secretary-treasurer: L. R. Lunden, University of Minnesota.

Convention: Joint meeting with Western Association, June 26-28, Denver.

#### Eastern Association

President: Boardman Bump, Mount Holyoke College; secretary-treasurer: Irwin K. French, Middlebury College.

Convention: December 4-6, Chalfonte-Haddon Hall, Atlantic City, N.J.

#### Southern Association

President: C. B. Markham, Duke University; secretary-treasurer: Gerald D. Henderson, Vanderbilt University.

#### Western Association

President: Paul A. Walgren, University of Southern California; secretary-treasurer: George A. Hall, California Institute of Technology.

Convention: Joint meeting with Central Association, June 26-28, Denver.

#### Schools for Negroes

President: V. D. Johnston, Howard University; secretary: L. H. Foster Jr., Tuskegee Institute.

Convention: May 13-14, Atlanta, Ga.

#### Association of College Unions

President: Donovan D. Lancaster, Bowdoin College; secretary-treasurer: Edgar A. Whiting, Cornell University; editor of publication: Porter Butts, University of Wisconsin.

### Association of Physical Plant Administrators of Universities and Colleges

President: William F. Holman, University of Minnesota; secretary-treasurer: A. F. Gallistel, University of Wisconsin.

Convention: May 16-18, University of Arkansas, Fayetteville.

### American College Public Relations Association

President: E. Ross Bartley, Indiana University; secretary-treasurer: Edward P. Vonderhaar, Xavier University, Cincinnati.

### College and University Personnel Association

President: Donald E. Dickason, University of Illinois; secretary-treasurer: Marion Darr, Purdue University.

### National Association of College Stores

President: Herbert Hays, Berea College; executive secretary: Russell Reynolds, 189 West Madison Street, Chicago.

### National Association of Educational Buyers

President: Charles W. Hoff, University of Omaha; secretary-treasurer: Bert C. Ahrens, 45 Astor Place, New York, N.Y. Convention: May 11-14, Hotel Statler, Boston.



# PRODUCT INFORMATION

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Gray Magic Royal Typewriter

80 The Edwin F. Guth Co.  
Glass Surface Troffer

81 Hild Floor Machine Co.  
Model V-A Floor Machine

82 American Optical Co.  
Microscope Illuminator

83 A. S. Dick Co.  
Mimeograph Drawing Instruments

84 Market Forge Co.  
Stainless Steel Mop Wringer

### Key

85 J. A. Saxeaur Mfg. Co., Inc.  
Faucet Rebuilding Unit

86 The Silax Company  
Silax Coffee Maker

87 The Calotex Corp.  
Calotex Decorated Panels

88 Dreyer-Gappert Co.  
Skeleton and Circulation Charts

89 Wyandotte Chemicals Corp.  
"Modern Commercial Detergent"

90 The Blaw-Knox Company  
"Blaw-Knox Universal Building"

Information on the materials, equipment and supplies with which an institution is built, operated and maintained and which are used in its various departments is of vital interest to those charged with the business operation. College and University Business recognizes the importance of this information and believes it has rendered a real service by grouping manufacturers' announcements and new product descriptions into a separate part of the magazine. We believe this is an infinitely better plan than to mix such information through the editorial pages where it becomes obscure and confusing.

You will find manufacturers' advertisements from pages 41-88. Pages 86-87 contain descriptions of new products and items of interest. Further details on any product advertised or described may be obtained without obligation and with a minimum of effort by use of the postcard below.

USE THIS  
CARD

*This card is detachable and is provided for your convenience in obtaining information on all items advertised in this issue. See reverse side.*

### BUSINESS REPLY CARD

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2 CENTS POSTAGE WILL BE PAID BY

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FIRST CLASS  
PERMIT NO. 134  
SEC. 510 P. L. S. R.  
CHICAGO, ILL.

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NAME

TITLE

INSTITUTION



# *Goodform* is the word for Quality!

REG. U. S. PAT. OFF.



**QUALITY** in Goodform chairs starts with fine materials—aluminum framing, foam rubber cushioning, colorful plastic-coated upholstery.

Welded aluminum means no joints to loosen, no rough, splintery edges to snag clothing. Aluminum frames remain permanently rigid and strong, will not burn, are light in weight. The beautiful, sparkling anodic finish requires minimum maintenance. Foam rubber cushioning of shaped seat and back, available on specification, gives a degree of comfort seldom found in a hotel, restaurant, or school chair.

Goodform Aluminum Chairs in

constant use for fifteen years and more are as sound, comfortable and good looking today as when new. Initially, you may pay more for Goodform, but when you figure long service life, ease of cleaning and freedom from maintenance, you'll find Goodform the most inexpensive chairs you can buy.

No. 4310 shown here is one of a complete line designed for hotels, restaurants, schools, and other institutions. Write for Institutional Chair folder and the name of a Goodform distributor who is ready to serve your needs. The General Fireproofing Company, Dept. S-5, Youngstown 1, Ohio.

## GOODFORM ALUMINUM CHAIRS



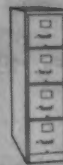
## GENERAL FIREPROOFING

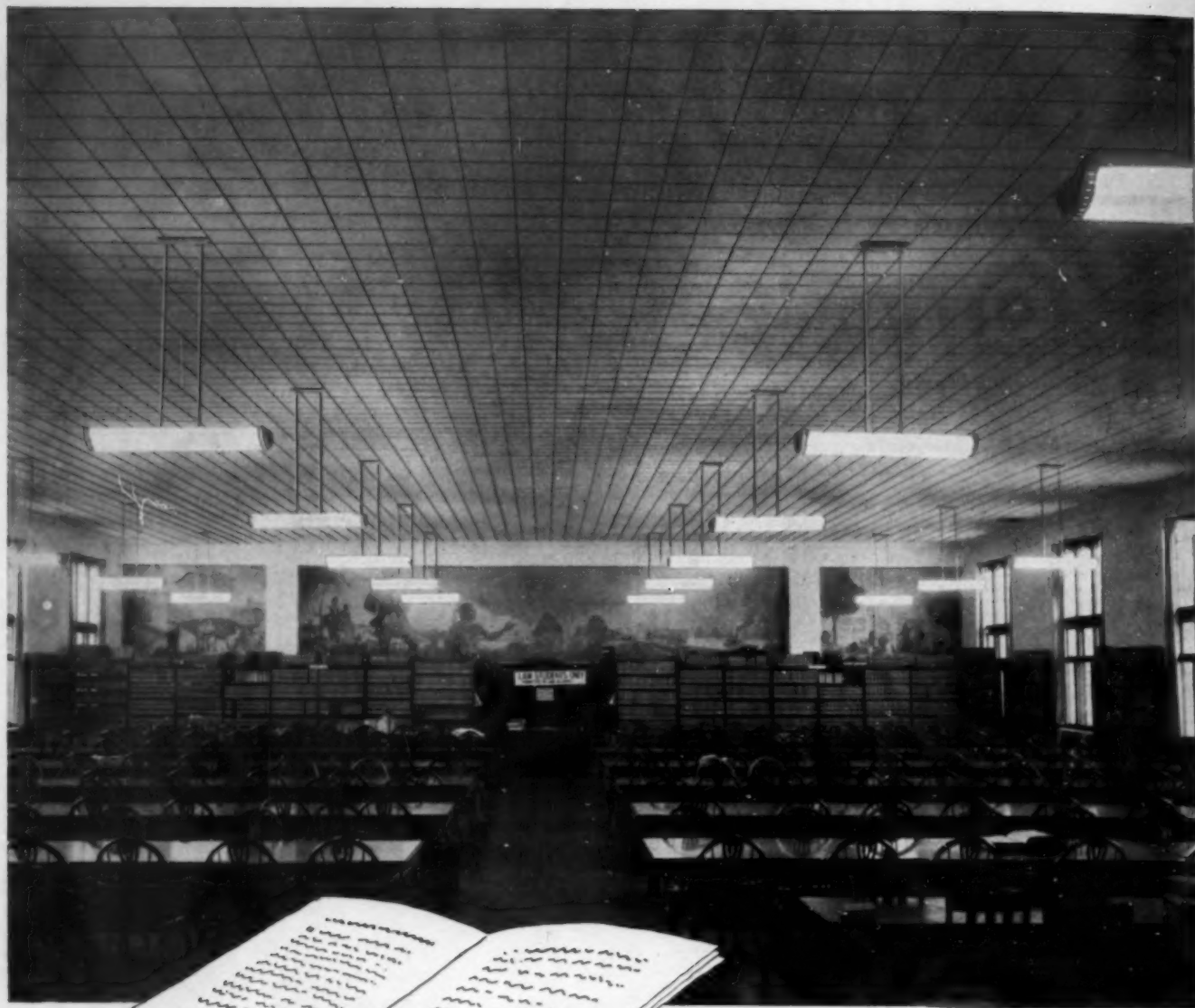
*Foremost in Metal Business Furniture*



Goodform Table No. 4230  
and Chairs No. 4310

There is a complete line  
of GF metal furniture—  
desks, tables, chairs, files  
and shelving





## How long does it take

### to prepare an assignment?



**THAT DEPENDS** on how quiet the library is, how easy it is for a student to concentrate and grasp what he's reading. Unwanted noise and reverberation can automatically lengthen the time required to read a given selection, plus reducing the mental efficiency of the reader.

That's why modern Sound Conditioning is so important, so beneficial to effective study. No library can accomplish the full purpose for which it was built if distracting, unchecked noise prevents mental concentration.

Hundreds of college and university libraries have already solved the noise problem in reading rooms, hallways, classrooms, lecture halls and auditoriums

with Acousti-Celotex ceiling tile. This lightweight cane-fibre tile soaks up noise immediately, can be painted and washed repeatedly without reducing its sound absorbing efficiency.

Your local Acousti-Celotex distributor will gladly analyze *your* noise problem, absolutely free. Write to-day for his name and for your free copy of the illustrated booklet "Quiet Comfort for School and College." The Celotex Corporation, 120 South La Salle Street, Chicago 3, Illinois.



**ACOUSTI-CELOTEX**  
*Sound Conditioning*

THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS

PRODUCTS FOR EVERY SOUND CONDITIONING PROBLEM

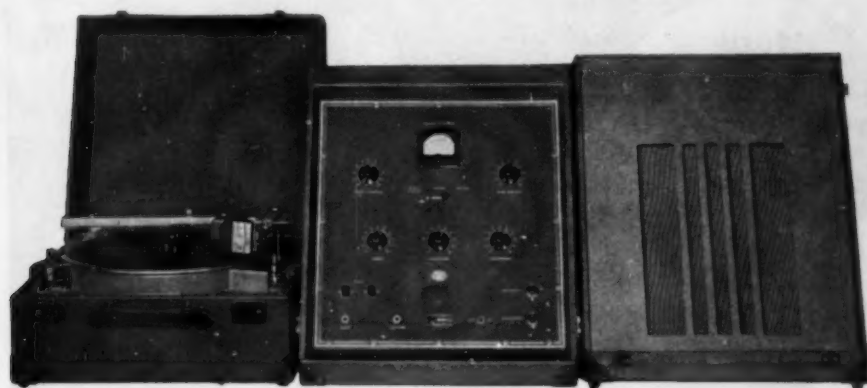
COLLEGE and UNIVERSITY BUSINESS



FOR MICROGROOVE OR STANDARD EQUIPMENT

# PRESTO

rates straight A



## PRESTO Y-3 for professional quality

At last a portable recorder and playback for both microgroove and standard recordings that measures up to most critical professional standards. Feeds of 112 and 224 lines per inch, both inside-out and outside-in. Handles records up to 17 1/4 inches.



## PRESTO Orange Label Discs for dependability

Minimum surface noise, excellent high frequency response, uniform high quality and freedom from chemical and mechanical imperfections. No wonder Presto Orange Label Discs have been the accepted discs for school use for sixteen years!

## PRESTO Universal Master Record Player

Plays all type records both microgroove (33 1/3 rpm and 45 rpm) and standard (78 rpm). A precision machine far superior to the ordinary turntable because speed regulation is highly accurate and mechanical disturbance is reduced to absolute minimum.



## PRESTO K-10 for versatility

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WORLD'S LARGEST MANUFACTURER OF INSTANTANEOUS  
SOUND RECORDING EQUIPMENT AND DISCS

Presto Recording Corporation, P. O. Box 500  
Hackensack, N. J.

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☐ Universal Master Record Player  
☐ Presto Orange Label Discs

☐ Send me a free subscription  
to "The Presto Recorder"

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School or College

City  State

*Control food costs... Save time...*  
**with TOLEDO all the way!**

Now—modern Toledo Scales and Food Machines *take the guesswork out of cost control* in your kitchen...help you serve tastier foods.

For example...the Toledo Steak Machine produces tempting menu items...is rapid and simple in operation...easy to clean and to keep clean.

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*New*  
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Wonderful New Toledo Steaks...tempting, tasty, delicious...a new item for your menus...produced by the Toledo Steak Machine.

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**SAWS.** New Toledo Saw . . . gives you big capacity . . . new speed and ease in cleaning.



**CHOPPERS.** New Speed . . . Toledo Chopper . . . gravity feed. Choice of three models to meet your needs.



**WEIGH IT IN.** Toledo Receiving Scales ideal for weighing-in all produce and meats . . . Portable Scale Model 1800.



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Picture shows Wear-Ever  
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## THIS CHAIR PAYS DIVIDENDS 2 WAYS

... in customer approval  
... in lasting durability

It is posture-designed for comfort. Legs are self-leveling. Its smooth, splinter-proof surfaces can't snag stockings. Lightweight for easy handling. Silvery alumilite finish won't show fingermarks, won't chip, crack or peel. Durable, washable upholstery fabric: red, blue, white, green, brown and dark green. See your supply house or mail coupon. The Aluminum Cooking Utensil Company, 4005 Wear-Ever Building, New Kensington, Pennsylvania.



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Matching Pedestal Tables.  
Formica tops, many colors,  
square, oblong, round styles,  
in all sizes.



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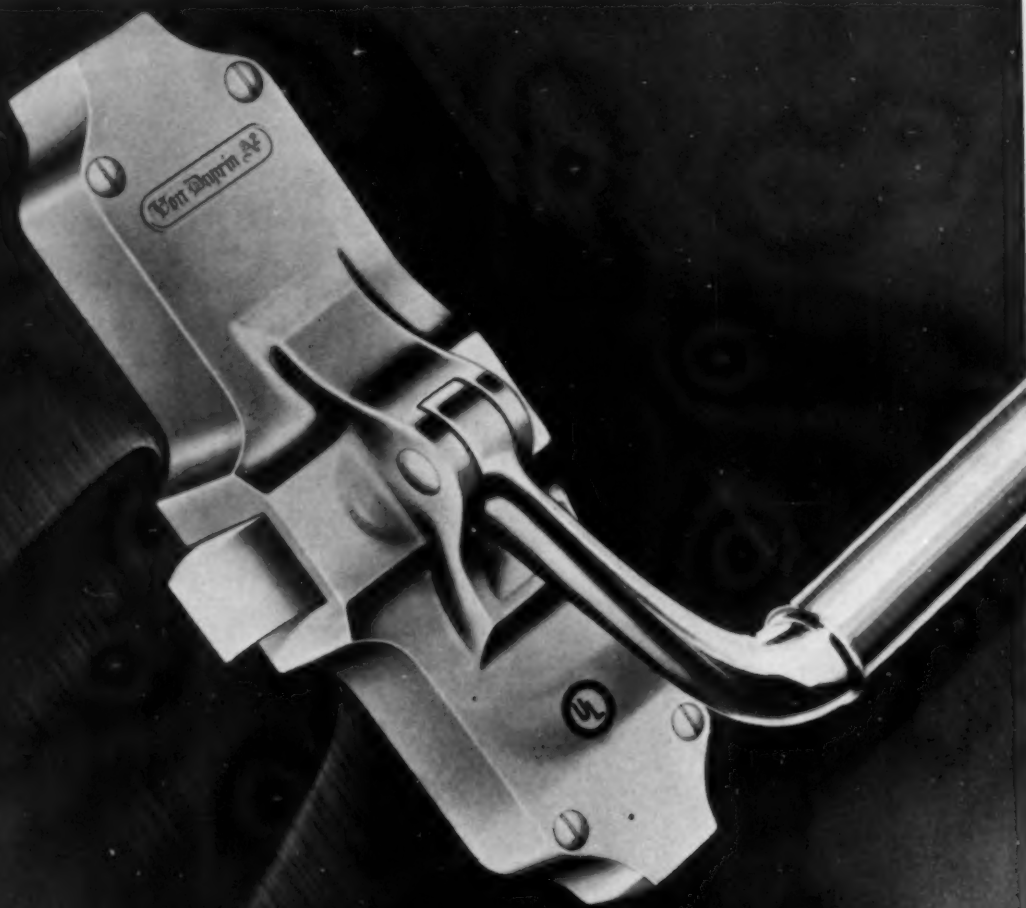
Color ..... Also price on (Quantity) .....

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FIRM .....

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Drop-forged Von Duprins are the highest quality exit devices made. They have longer life and far greater strength. They add the precision, beauty and character of drop-forged metals to the doors on which you put them.

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Isn't that just what you want?

VON DUPRIN DIVISION  
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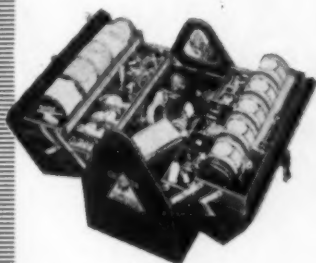
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## The 'Sexauer-System' Cures Plumbing Repair Headaches



Brings you 4-way benefits

1. Cuts repair time and costs
2. Stops makeshift jobs
3. Saves water and fuel
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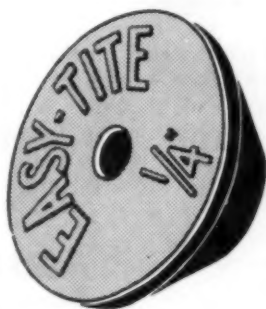
**SAVES TIME, RETURN-TRIPS AND EXPENSE**

## 'Sexauer' Methods Stop Leaks



Costly fixtures are ruined by neglected leaks. The 'SEXAUER' pat'd. Precision Tool re-forms rough, raised, washer-chewing faucet and valve seats to a smooth, round, corrosion-resisting surface, better than when new. First step in a repair technique that has become standard procedure with maintenance men everywhere.

## "EASY-TITE" 300° F. Faucet Cushions



Follow-up to the seat reforming operation, pat'd. "EASY-TITES" outlast ordinary washers 6-to-1. Made of easy-closing DU PONT NEOPRENE, they resist absorption and withstand extreme high temperatures. Fabric-reinforced like a tire — won't split or mush out of shape.

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"MULE-KICK" WASTE PIPE CLEANER prevents clogs, keeps drains free-flowing, sanitary. *Safe to use*—no choking or dangerous fumes.

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will gladly consult with you on plumbing and heating upkeep problems. He'll survey your installation, if you desire, suggest economical balanced stocks—whatever the age or style of your fixtures. No obligation. A postcard will bring him—and your free 'SEXAUER' catalog—promptly. Write today.

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The simple ruggedness and ease of maintenance inherent in pioneer design . . . the experienced craftsmanship and exclusive use of *solid* Northern Birch,—make SIKES "Colonist Craft" Furniture remarkably *economical* . . . both in initial cost and *long service-life*.

Sikes famous "Butterscotch" finish has a national reputation for mellow beauty and for resistance to rough usage . . . and Sikes hand-pegged joinery withstands exceptional strain.

It's easy, utilizing this authentic Early American charm, to give rooms a new atmosphere of warmth and livableness.

Living room, bedroom and office pieces (including SIKES Business Chairs for "All-Day Working Comfort") are available, in a variety of finishes . . . in modern designs, too. We are also glad to help design and produce furniture for specific requirements. Send for particulars, stating uses for which furniture is desired.



7255



7455



7299 1/2



7270 1/2

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FOR DORMITORIES, DINING ROOMS, LIBRARIES,  
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# America's Health is Developed in the Classroom



WHERE ELSE than in our schools do the same opportunities exist to develop a high standard of health habits?

Look at what has already been accomplished. To our schools goes a large share of the credit for improved oral hygiene, for broader dietary knowledge, for training in proper ocular care and the importance of correct lighting.

Another vital health factor is controlled atmosphere—healthful temperatures, correct humidity and adequate ventilation. When these conditions prevail in the classroom, they can not only be demonstrated as one phase of health education, but direct benefits result through better health, improved alertness and a more efficient and responsive student body.

Children require an even, low temperature because their basic metabolism is higher than that of adults. In a room that's overheated, children perspire, encouraging unhygienic habits and cleanliness is difficult to maintain. As the day progresses a dull, listless spirit overtakes the entire class when subject to improper atmospheric conditions.

Yet modern, automatic control systems make it possible to always maintain ideal classroom conditions—temperature, humidity and ventilation. For more than 60 years Minneapolis-Honeywell has been the recognized leader in the field of automatic control. From the standpoint of engineering experience as well as product performance, Honeywell is uniquely qualified for consultation about your control requirements. Minneapolis-Honeywell, Minneapolis 8, Minnesota. In Canada, Leaside, Toronto 17, Ontario.

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**Honeywell**  
CONTROL SYSTEMS

*Guarding America's Health with Controlled Atmosphere*

73 BRANCHES FROM COAST TO COAST WITH SUBSIDIARY COMPANIES IN: TORONTO • LONDON • STOCKHOLM • AMSTERDAM • BRUSSELS • ZURICH • MEXICO CITY

## TWO GREAT NEW TORO MOWERS FOR SCHOOL USE



### MOWS A FOOTBALL FIELD IN 30 MINUTES!

This big, smooth cutting Toro Professional cuts 2 acres per hour. Operates beautifully among trees, shrubs and walks. Can be equipped with a snow plow. Dependable 4 h.p. engine. Forward and reverse transmission. Riding sulky. "Out-in-front" reel for extra smooth cut. Rugged steel construction. Also available in 30" width... convertible to 76" width by adding wing units.



### FOR LARGE AND SMALL CAMPUS AREAS

The Toro Starlawn comes in 24", 27" and 30" cutting widths... with two exclusive features! Floating axle holds reel parallel to turf when wheel rides over walk or into depression. High-low cut angle adjustment keeps bed knife in proper position at all times. Heavy-duty engine. Independent reel and traction controls for easy transport. All-steel construction. Sulky for 30" size.



**FREE DEMONSTRATIONS.** Your nearby Toro distributor can show you America's most complete line of mowing equipment... give you expert advice... fast, efficient service... complete parts and repairs. Watch these outstanding mowers in action... select the mower best suited for your needs. For information write: Toro Manufacturing Corp., Dept. CUB-5, Minneapolis 6, Minn.

# SAFE!



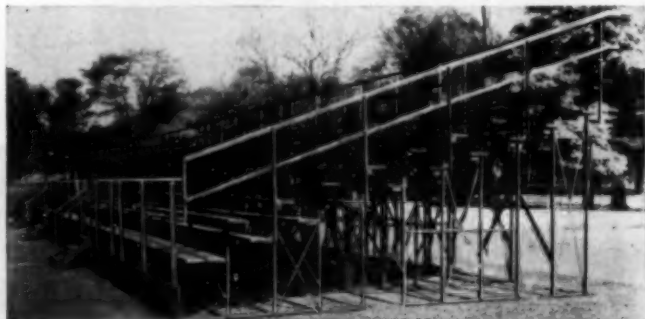
**BOTH OF THEM... Kelly on the field and Joe Spectator in the grandstand.**

Because, Joe and several thousand others are seated on a Wayne Grandstand, and "Wayne Stands For Safety."

To you, a prospective purchaser of a grandstand or gymstand in whose hands the safety of many people may rest, it's good to know that all Wayne stands utilize the construction principles that characterized Wayne Observation Towers during the war.

And, it's also good to know that all Wayne Stands, large or small, conform to the exacting requirements of the Safety Code for Grandstands of the American Standards Association, the Grandstand Regulations of Pennsylvania, the Standard Specifications of the American Institute of Steel Construction and the Recommendations of the U.S. Forest Products Laboratory. You can play safe, too—by specifying Wayne Stands. Send for our catalog.

The new WAYNE Grandstand at Haverford College



"Wayne Stands  for Safety"

## WAYNE IRON WORKS

REPRESENTATIVES IN 42 CITIES

146 NORTH PEMBROKE AVE.

WAYNE, PENNA.



# Adlake Aluminum Windows give you FINGER-TIP CONTROL

## Ease of Operation a Dominant Feature

Imagine windows you can open and close, *easily*, with one finger! Adlake Aluminum Windows, because of patented serrated guides and specially designed sash balances, actually give you finger-tip control. What's more, this ease of operation persists for the life of the window. In a test by an independent research firm, an Adlake Window was opened and closed *one million times*. After the millionth opening, the exclusive Adlake weather stripping showed little or no signs of wear! The window moved as freely and easily as it did at the beginning of the test!

Adlake Windows *last the life of the building* because they're precision-built—down to the smallest detail. No painting or maintenance is required, so that eventually they *pay for themselves*. Drop us a post card today for complete data. Address: 1117 N. Michigan, Elkhart, Indiana.

### SUPERLATIVE VALUE!

Adlake windows offer you

- No Maintenance Cost • Minimum Air Infiltration • Freedom from Warp, Rot, Rattle, Stick or Swell • Easy Installation • Sturdy, Lustrous Aluminum Construction



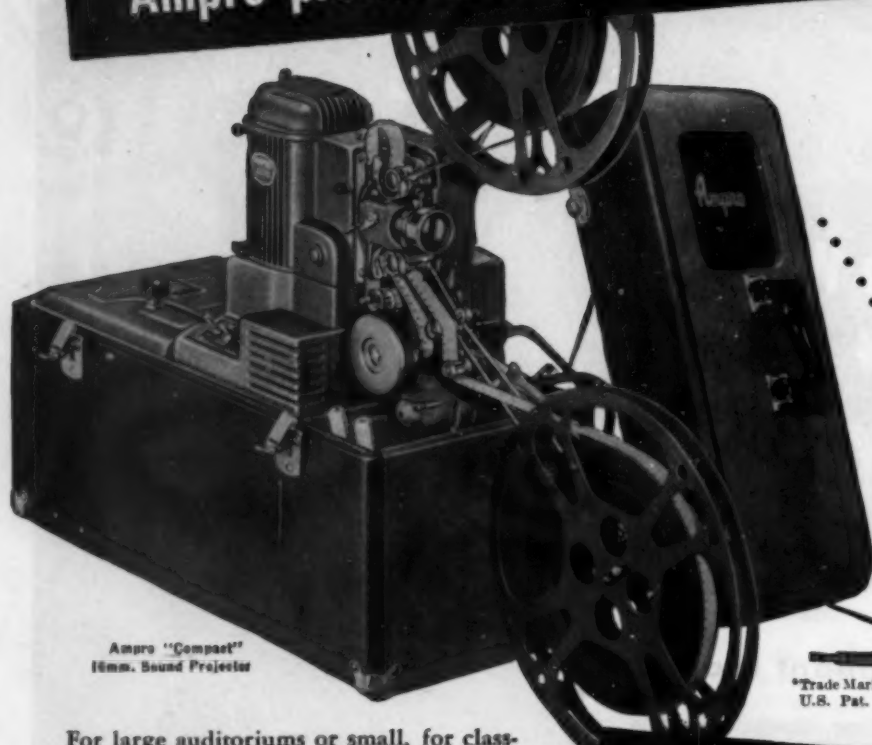
THE **Adams & Westlake** COMPANY

Established 1857 • ELKHART, INDIANA • Chicago • New York



# for *every* projection need

**Ampro precision extra-quality projectors**



Ampro "Compact"  
16mm. Sound Projector

Amprosound  
"Premier-20" 16mm.  
Sound Projector



Ampro  
"Imperial"  
16mm. Silent  
Projector

\*Trade Mark Reg.  
U.S. Pat. Off.

For large auditoriums or small, for classrooms or showroom, convention booths or office, for 16mm. silent or sound films, for film strips or slides — there is an Ampro projector to fill your exact requirements.

For more than 20 years, Ampro has been designing and building quality projectors for every conceivable purpose. These projectors have been rugged, trouble-free, easy-to-operate — efficient in illumination and tone quality, built to give many years of satisfactory service. These important qualities have been tested and proved in *millions of performances* under the most rigorous conditions.

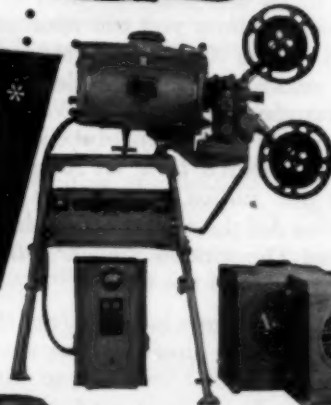
That's why Ampro projectors are used and approved by leading school systems, universities, top industrial concerns, churches, many branches of U.S. and foreign government services — and in private homes all over the world.

## Send for Circular

Write today for illustrated circular giving full details and prices of Ampro models in which you are interested. Also for FREE copy of illustrated booklets "Toward a Better World" (how churches are utilizing sound pictures) and "A New Tool for Teaching" (the story of sound films in the classroom) or "A Powerful Aid to Industry" (how industry can use sound films). These informative booklets will be mailed to you FREE, postpaid.

**AMPRO**  
8mm Silent • 16mm Silent  
16mm Sound on Film • Slide Projectors  
16mm Arc Projectors

A General Precision  
Equipment Corporation  
Subsidiary



Amprosound Model "AA" 16mm.  
High Intensity ARC Projector

Amproslide 2" x 2"  
Projector  
Model "30-A"

Amproslide Dual  
Purpose Projector  
Model "30-D"



**AMPRO CORPORATION • 2861 North Western Avenue • Chicago 18, Illinois**  
IN CANADA: TELEPHOTO INDUSTRIES LIMITED—1438 YONGE STREET, TORONTO

*These noisy classrooms  
are hard on discipline!*

*Why not discipline  
the noise with  
**FIBRETONE**\* ceilings?*



➡ **SEND** for the brochure that tells you about noise-quieting  
**FIBRETONE . . . the acoustical ceiling with built-in noise traps**

● Thousands and thousands of "noise traps" in classrooms, corridors, noise centers!—that's the secret of Fibretone Ceilings. The noise traps are scientifically designed cylindrical holes drilled in the Fibretone sound-absorbing panels. In a classroom 23' x 35', for instance, you'd have 389,620 of these ingenious "noise traps," constantly functioning to trap and dissipate irritating, unnecessary noise—noise that reduces personal efficiency of students and teachers. Send for the new Fibretone brochure. Johns-Manville, Box 290, New York 16, N.Y.

\*Reg. U. S. Pat. Off.



**Johns-Manville**

Transite® Movable Walls—Terraflax and Asphalt Tile Floors—Corrugated Transite®—Flexstone® Built-Up Roofs—Etc.



# Planning a NEW SCIENCE Laboratory?

LAYOUTS of equipment and plumbing details should be completed *before* building construction is started, to avoid excessive installation costs. Kewaunee engineers are experienced and can offer assistance without cost or obligation.

## Some of the New Science Buildings with Kewaunee Equipment are:

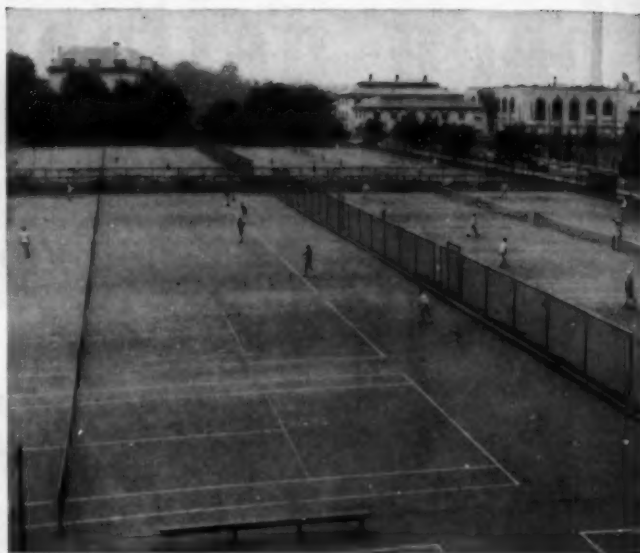
- University of Michigan, Ann Arbor, Michigan
- University of Illinois, Urbana, Illinois
- University of Florida, Gainesville, Florida
- University of Washington, Seattle, Washington
- University of Arizona, Tucson, Arizona
- University of West Virginia, Morgantown, W. Va.
- Drake University, Des Moines, Iowa
- Wayne University, Detroit, Michigan
- Southern Methodist University, Dallas, Texas
- Michigan State College, East Lansing, Michigan
- Calvin College, Grand Rapids, Michigan
- Franklin & Marshall College, Lancaster, Pa.
- St. Michaels College, Winooski Park, Vermont

Here is more evidence that America's Finest Laboratories are Kewaunee Equipped. Write us about your Laboratory Problems.



C. G. Campbell, President

5069 S. Center Street Adrian, Michigan  
Representatives in Principal Cities



Photo—Courtesy United States Naval Academy—Annapolis, Md.

## FAMOUS UNIVERSITIES Use

# Laykold TENNIS COURTS

Many Universities, Schools, Cities and Clubs throughout the country have converted their clay courts to LAYKOLD or GRASSTEX. Many more are planning to do so. Maintenance costs practically disappear and playing time is usually tripled.

Hundreds of these installations are now over 15 years old—yet remain in excellent condition. Some of these courts are undoubtedly near you. Write us for their locations—we will be glad to arrange an inspection trip for you.

### SOME of the ADVANTAGES

- RESILIENT—easy on feet and legs.
- ATTRACTIVE—choice of black, red or green.
- ALL-WEATHER—drain quickly, playable all year.
- MAINTENANCE—very low, no rolling or watering.

Renew your old all-  
weather court with

**LAYKOLD**

RESURFACER  
and WEAR COAT

For new courts  
or resurfacing old,  
ask our help

Booklets—Estimates  
— Counsel



### IN THE WEST—

**STANCAL ASPHALT & BITUMULS COMPANY**  
200 BUSH STREET • SAN FRANCISCO 4, CALIF.

Los Angeles 14, Calif. • Oakland 1, Calif. • Portland 4, Ore. • Tucson, Ariz.

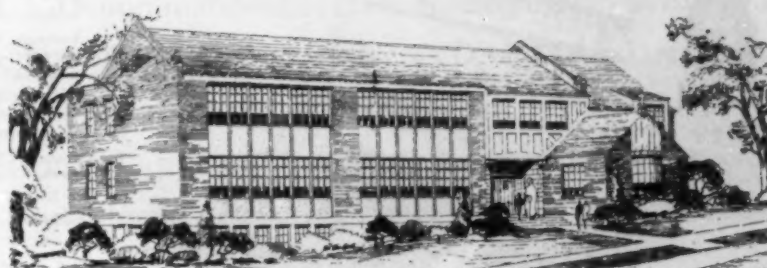
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# TWO UNDER CONSTRUCTION

Now under construction in Pueblo, Colorado, and Salt Lake City, Utah, are these two new schools, funds for which were raised in campaigns under Lawson Associates direction.



Cathedral of the Madeleine School

The objective of the Pueblo Central Catholic High School campaign was \$400,000. More than \$479,000 in pledges was received, though the largest sum ever raised in Pueblo before was \$170,439, and that was for the joint Community Chest and War Fund.

The objective of the Cathedral of the Madeleine School Building Fund in Salt Lake City was \$175,000. In this undertaking 1,469 contributors gave more than \$212,000—an average gift of \$144.



Pueblo Central Catholic High School

If your institution is contemplating an appeal for funds, we invite you to investigate our services. This firm undertakes preliminary consultation and surveys without obligation.

Send today for the illustrated brochure, "Your Appeal to the Public." Address Department B-5.

## B. H. LAWSON ASSOCIATES, INC.

307 SUNRISE HIGHWAY  
ROCKVILLE CENTRE, NEW YORK

# INDIANAPOLIS

## 1. ARSENAL TECHNICAL HIGH SCHOOL GYM

Vannegut, Bohn & Mueller, Architects; Wm. P. Jungclaus Co., Inc., General Contractors

## 2. GEORGE WASHINGTON HIGH SCHOOL

Vannegut, Bohn & Mueller, Architects; Wm. P. Jungclaus Co., Inc., General Contractors

## 3. BROAD RIPPLE HIGH SCHOOL

Vannegut, Bohn & Mueller, Architects; Service Construction Co., General Contractors; J. L. Simmons Co., Inc., General Contractors

## 4. CRISPUS ATTUCKS HIGH SCHOOL

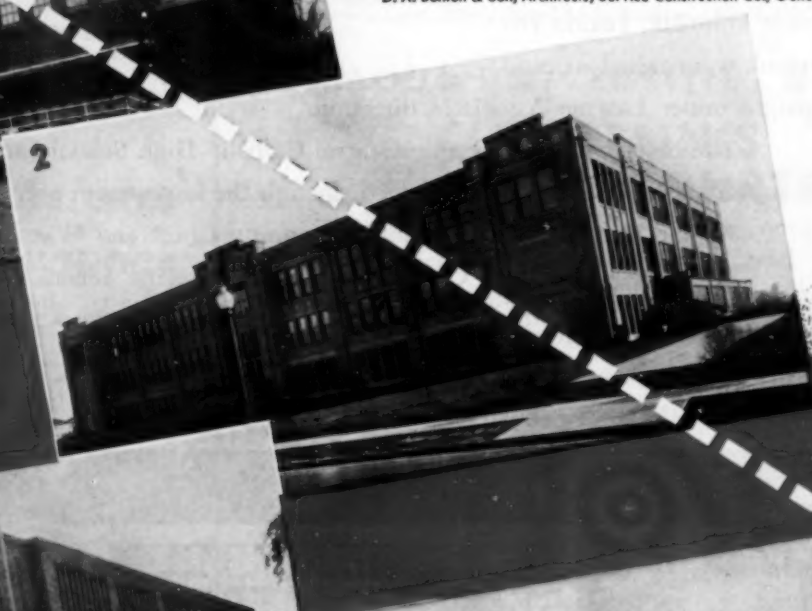
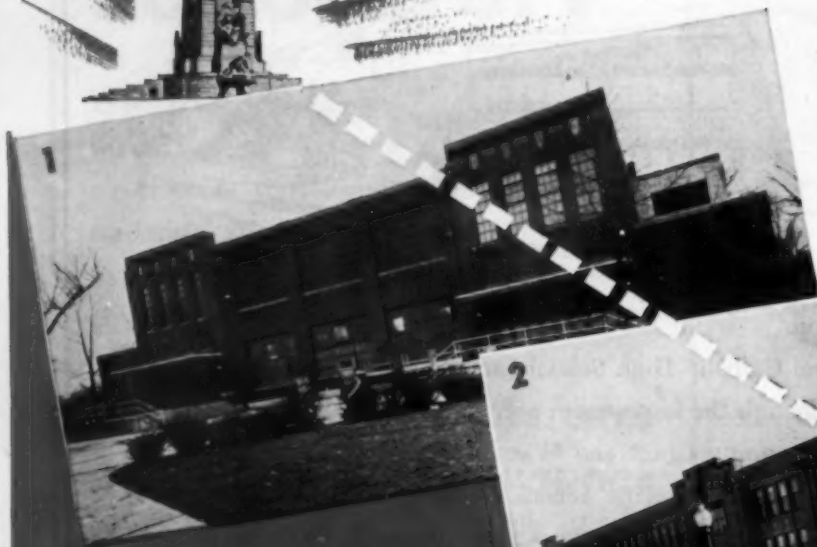
Harrison & Turnock, Architects; D. A. Bohlen & Son, Architects; Service Construction Co., General Contractors

## 5. THOMAS CARR HOWE HIGH SCHOOL

McGuire & Shook, Architects; J. L. Simmons Co., Inc., General Contractors

## 6. SACRED HEART HIGH SCHOOL

D. A. Bohlen & Son, Architects; Service Construction Co., General Contractors





# chooses **MEDART**

...for top gym installations. These six prominent schools... 5 Public High Schools and 1 Denominational... recognizing that "MEDART SERVES THE NATION'S SCHOOLS"... chose MEDART! Medart is proud of these installations in the heart of the basketball center of the country. Basketball fans everywhere will applaud these modern gyms that are so well equipped for playing and viewing . . . the greatest of indoor scholastic sports.



View showing Telescopic Gym Seats in open position and practice court Backstops swung up out of the way for viewing game on main exhibition court.



View showing Telescopic Gym Seats in closed position and practice court Backstops lowered for use in gym classes permitting two games to be played at one time... (Telescopic Gym Seats require only 32" of floor space in closed position.)

**FRED MEDART PRODUCTS, INC.**

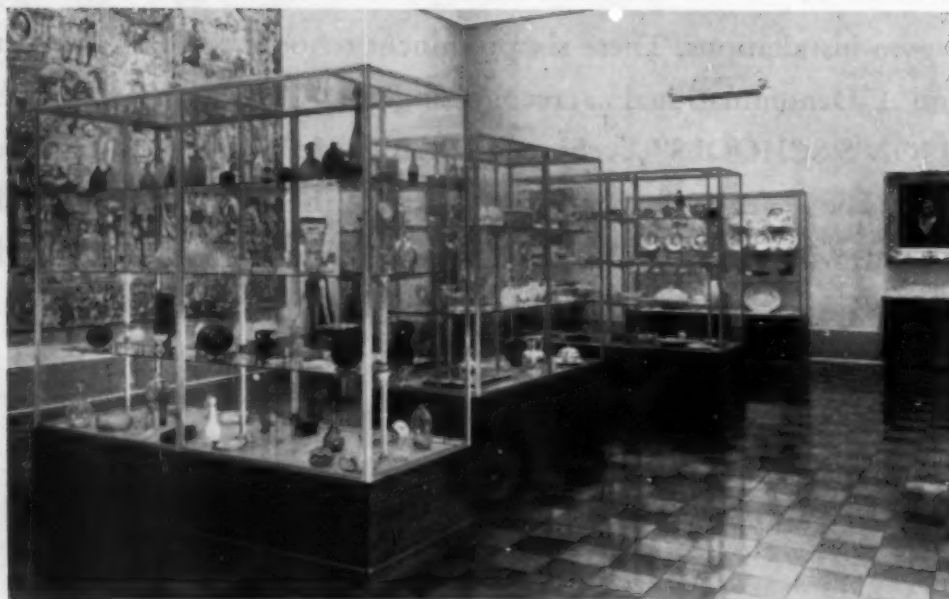
LEADERS FOR OVER 75 YEARS IN THE  
MANUFACTURE OF SCHOOL EQUIPMENT

3535 DEKALB ST.



ST. LOUIS 18, MO.

# In a Class by Themselves MICHAELS "Time-Tight" Cases



Michaels exhibit cases are used extensively by colleges and universities. They are designed for beauty as well as utility, and built of the finest materials obtainable. "Time-Tight" cases are available in a wide range of standard sizes and styles, or will be built to meet your specifications. Cases are theftproof, dustproof, and possess many outstanding constructional features. Write for literature containing complete information.

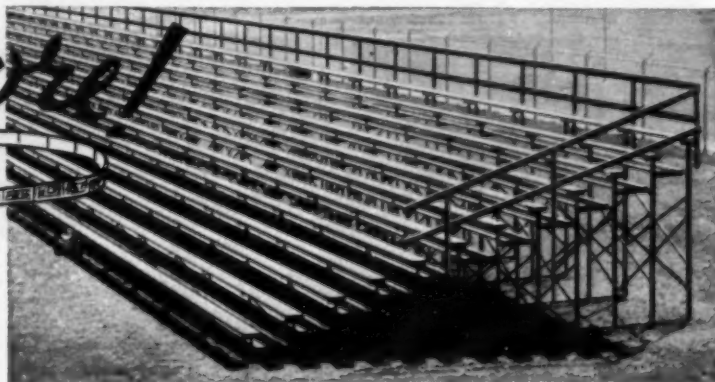
(Representatives Wanted)

MUSEUM CASE DIVISION OF The MICHAELS ART BRONZE CO., Inc., Covington, Kentucky

Manufacturers since 1870 of many products in Bronze, Aluminum and other metals

## Only 3 months!

**CAN YOU SEAT YOUR  
CAPACITY CROWDS AFTER  
THE TICKETS ARE SOLD?**



There's only 3 more months before the '49 football season opens. Will you have enough seats for overflow crowds? You can still get your Universal Steel Grandstands in time for opening day. Select your needs from table below or specify space measurements or number of extra seats you'll need. We'll send an estimate of their cost. Use the coupon, NOW!

(PORTABLE WOOD BLEACHERS ARE ALSO AVAILABLE—NOW.)

TABLE OF SEATING CAPACITIES

PLAN	LENGTH	ROWS HIGH	CAPACITY
No. 1	90'0"	8	520
No. 2	128'0"	10	1000
No. 3	198'0"	10	1430
No. 4	234'0"	12	2028

**SEND US  
YOUR  
INQUIRY  
FOR  
PRICES  
NOW! →**

Engineering Dept.  
UNIVERSAL BLEACHER COMPANY  
Champaign, Ill.

Without obligation to me, send a cost estimate on Plan No. \_\_\_\_\_. Our space measurements are \_\_\_\_\_. We need seats for \_\_\_\_\_ persons.

Name \_\_\_\_\_

Address \_\_\_\_\_

City - State \_\_\_\_\_

# Universal BLEACHER COMPANY

Bleacher Experts for Over 30 Years

# Luncheonette Service Fills a Need —and Pays!



## LIQUID Luncheonettes



**Fountain  
for Fountain  
You See  
MORE LIQUIDS**

An up-to-the-minute fountain-luncheonette, or "snack bar" pays its way . . . and provides a welcome service. Such installations supplement established food service facilities.

When you consider the possibilities, call on Liquid to answer the many questions that come up. For more than 60 years, Liquid engineers have planned many of America's most efficient fountain installations.

Liquid can equip and install complete fountain to meet your specific requirements. You'll simplify food-service planning by availing yourself of our accumulated experience, engineering aid and large production. *Write today for more information.*

● MAIL THIS COUPON . . . TODAY!

**THE LIQUID CARBONIC CORPORATION**  
3110 South Kedzie Ave., Chicago 22, Illinois

Please send me full information on  
Liquid Soda Fountains and Luncheonette Equipment.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Town: \_\_\_\_\_

State: \_\_\_\_\_



# A NEW

experience in

laboratory microscopy



● You *feel* the difference . . . You *see* the difference . . . from the first moment you begin to focus a new Bausch & Lomb BAV Laboratory Microscope.

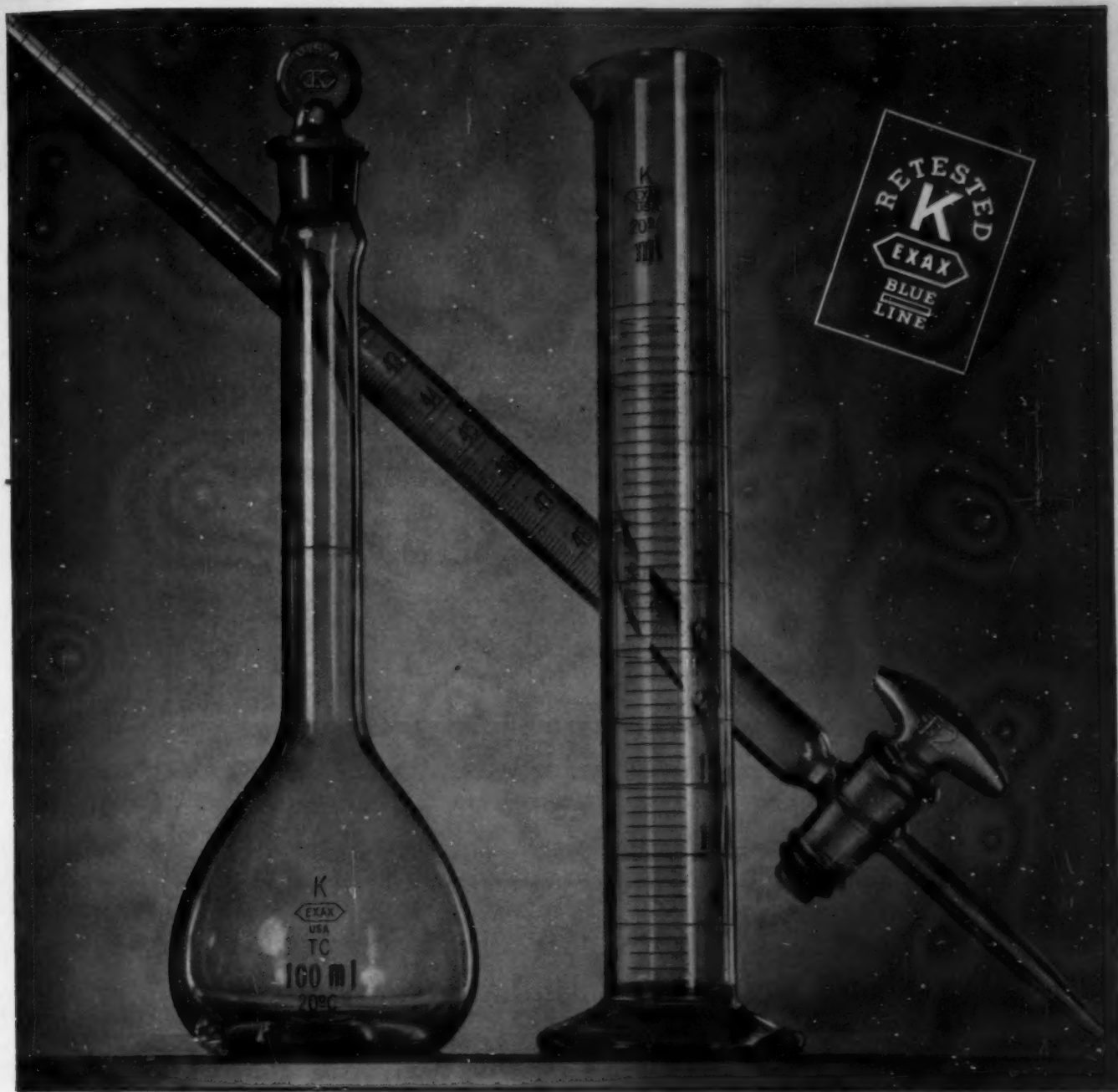
You obtain proper adjustment faster, more accurately, with less effort . . . superlative performance resulting from advanced mechanical features such as the variable focus condenser, threadless cell lens mounts, nosepiece with roller bearing stop, coarse adjustment with *matched* rack and pinion, and patented lever fine adjustment.

Most important of all, you *see* better . . . see images with clarity and sharpness unmatched by other standard laboratory microscopes.

Before you buy a new laboratory microscope be sure to see the Bausch & Lomb BAV.

**WRITE** for a demonstration to Bausch & Lomb Optical Company, 767-E St. Paul St., Rochester 2, N. Y.

## the Bausch & Lomb BAV Laboratory Microscope



*Kimble EXAX RETESTED Flask No. 23015;  
Cylinder No. 20030; Burette No. 17030.*

## There's no substitute for EXAX RETESTED quality

● EXAX RETESTED is America's No. 1 choice for accurate laboratory determinations simply because it is made and intended for that purpose. EXAX won't bounce, but it is thoroughly annealed for toughness... will stand every day handling and usage.

The great value of EXAX RETESTED lies in certain exclusive advantages. It is a special formula of glass, precision-made by specialty craftsmen.

The fine deep graduations are of a type which readily accepts the permanent fused-in blue filler. And... all

calibrations are marked and checked and retested with standards of highest precision.

So remember, if accuracy and fitness for the job are important, there is no substitute for EXAX RETESTED glassware.

*Look for the Kimble "K," the visible guarantee of invisible quality.*

**KIMBLE GLASS** TOLEDO 1, OHIO  
Division of Owens-Illinois Glass Company





# Spring Again...Clean-up Time

## HILLYARD TIME SAVING METHODS GIVE GREATER ECONOMIES

★ Hillyard's Hi-Quality Products will greatly reduce your labor costs during the Spring and Summer Clean-up. Hillyard products are designed to do the work. Their quality is supreme.

★ KURL-OFF—this revolutionary new varnish and paint remover is non-inflammable, and contains no alkali, mineral acids, water or other ingredients which might be harmful to the floor surface. Lifts varnish film almost immediately upon application. KURL-OFF requires no after rinse. It is non-corrosive.

★ STAR GYM—is recognized by outstanding Coaches, Athletic Directors and Players as the PERFECT FINISH. Made from 100% Tung Oil. No glare, non-slippery, and does not rubber burn.

★ SHINE-ALL—a neutral chemical cleaner that dissolves dirt and grime quickly. Cleans floors, walls, woodwork, painted and enameled surfaces efficiently. Does not have to be rinsed.

★ HIL-BRITE—a self-polishing, self-leveling, non-brittle, 100% No. 1 Grade Carnauba Wax containing no shellac, varnish, paint-ends, or resins. Approved by Underwriters Laboratories as being non-slippery.



There is a "Maintaineer" near you. His advice and recommendations on any floor or sanitation problem are given without obligation or cost.



FREE ON REQUEST



NO JOB TOO LARGE OR TOO SMALL FOR HILLYARD "MAINTAINERS"

# HILLYARD SALES COMPANIES

DISTRIBUTORS FOR

HILLYARD CHEMICAL CO., ST. JOSEPH, MO.

WAREHOUSE STOCKS IN PRINCIPAL CITIES.

## AN IMPORTANT MESSAGE To Managers of Endowment Funds

**A**FTER some eight years of excellent business, and sellers' markets, American industry is now entering a buyers' market. Activity and prices are dropping, and further declines are likely. The tremendous increase in industrial capacity spells only one thing—extreme competition in the period just ahead. What does this mean to you?

It means that you must watch your institution's investments even more carefully than ever. Some companies will do well in this new era—others will suffer badly. To avoid serious losses in capital and income during such an interval requires constant supervision, a lot of painstaking care and work, and prompt information.

Supplying such attention for institutional funds is our job. We are devoting our entire time to this field and have wide and reliable sources of business and financial information at our command.

We would welcome the opportunity to discuss with you how we could help you with your institution's investment problems.

Write to C. Lloyd Thomas, Vice-President, for full details.

## UNITED INVESTMENT COUNSEL

Affiliated with United Business Service

210 NEWBURY STREET

BOSTON 16, MASS.





**SMART, NEW DORMITORY ROOM . . . BY SIMMONS!** *Attractive, all-steel furniture assures years of outstanding service . . . at low cost.*

**FOR RELAXATION OR STUDY . . . IT'S SIMMONS!** *No matter how large or small the room, Simmons Dormitory Furniture is your best buy.*



*Beautiful Rooms*  
at  
**MARYMOUNT COLLEGE**

with **SIMMONS**  
*Dormitory Furniture*



STUDENT rooms at Marymount College are "homey" as well as comfortable. They're completely equipped with Beautyrest mattresses and Simmons all-metal furniture . . . the practical dormitory furniture that draws "straight A's" in beauty, construction and durability.

Other fine features of Simmons steel furniture are dresser drawers that never warp or stick . . . one-piece fireproof construction . . . welded supports . . . and the beautiful, long-wearing Simfast finish that doesn't mar or chip from constant use, spilled liquids, or exposure to heat and sunlight.

It will pay you to get more information on the low maintenance of Simmons furniture. See your Simmons distributor, or write to



↑ **SELECTION OF STYLE AND COLOR . . .**  
**SIMMONS** quality furniture . . . finished in your choice of rich grained, solid or two-toned color combinations.

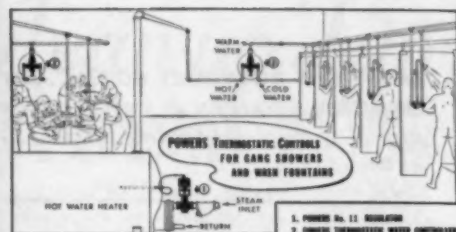
**SIMMONS COMPANY**

**DISPLAY ROOMS:**

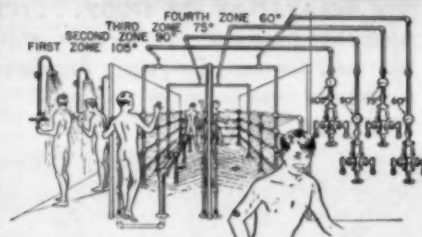
Chicago 54, Merchandise Mart • New York 16, One Park Ave.  
San Francisco 11, 295 Bay St. • Atlanta 1, 353 Jones Ave., N.W.



**CAN'T BEAT  
POWERS  
REGULATED  
SHOWERS**



**OTHER TYPES OF POWERS SHOWER CONTROLS**



**Zone Showers for Swimming Pool**

Bathers can really relax and enjoy a Powers regulated shower. No danger of scalding. No unexpected temperature changes.



**6" diam. dial.**



**Mixer for  
Exposed  
Piping**

**Dial  
Diameter  
3 1/4\"/>**



**Only One Moving Part**

**POWERS**

**Type H**

## ***Thermostatic* SHOWER MIXERS**

are **SAFE** against scalding caused by

**1 PRESSURE or 2 TEMPERATURE**

**fluctuations in water supply lines**

**Safer**—because of their quick acting response to any change in temperature setting, pressure or temperature variations in water supply lines. Users report control within 1/2 °F. **Greater Comfort**—shower temperature remains constant wherever set. No jumpy temperatures. **More Economical**—POWERS thermostatic mixers promptly deliver showers at the right temperature...no waste of time, hot or cold water.

For new installations or when modernizing obsolete showers...play safe, use Powers type H thermostatic shower mixers. May we send Circular H-48? **CHICAGO 14, ILL.**, 2706 Greenview Ave. • **NEW YORK 17, N. Y.**, 231 E. 46th St. **LOS ANGELES 5, CAL.**, 1808 W. Eighth St. • **TORONTO, ONT.**, 195 Spadina Ave.

**THE POWERS REGULATOR CO.**

OFFICES IN 50 CITIES • SEE YOUR PHONE BOOK

**Over 55 Years of Water Temperature Control**

49HM

# NOW AVAILABLE! YOURS FREE!

## The New 1949 B & A CATALOG

### \*2093 Potassium Bisulfate, Fused Lump, Reagent, A.C.S.

Activity (as H <sub>2</sub> SO <sub>4</sub> )	33-37%	1 lb. sub.	.82 lb.
MAXIMUM LIMIT OF IMPURITIES		5 lb. sub.	.80 lb.
Insoluble and NH <sub>4</sub> OH sol.	0.010 %	25 lb. jar	.41 lb.
Cl	0.001 %	2 x 25 lb. @ 1 1/2 lb. fan	
PO <sub>4</sub>	0.001 %		
Ca and Mg sol.	0.0005 %		
As	0.002 %		
Fe	0.001 %		
Heavy Metals (as Pb)	0.001 %		

#### CODES 2093 & 2094

This product is a combination of Pyrosulfate (approximately 60%) and Bisulfate. This amount of Pyrosulfate is desirable to eliminate spattering in fusions. For best results in the laboratory insist on B&A "A.C.S." quality.

### \*2094 Potassium Bisulfate, Fused Powder, Reagent, A.C.S.

Activity (as H <sub>2</sub> SO <sub>4</sub> )	33-37%	1 lb. sub.	.93 lb.
MAXIMUM LIMIT OF IMPURITIES		5 lb. sub.	.85 lb.
Insoluble and NH <sub>4</sub> OH sol.	0.010 %	25 lb. PBL drum	.46 lb.
Cl	0.001 %	2 x 25 lb. @ 1 1/2 lb. fan	
PO <sub>4</sub>	0.001 %		
Ca and Mg sol.	0.0005 %		
As	0.002 %		
Fe	0.001 %		
Heavy Metals (as Pb)	0.001 %		

### 2096 Potassium Bisulfite, Meta, Cryst. Reagent

K <sub>2</sub> SO <sub>3</sub>	M.W. 222.31	1 lb. sub.	.73 lb.
Activity (as H <sub>2</sub> SO <sub>3</sub> )	Min. 95%	5 lb. sub.	.65 lb.
MAXIMUM LIMIT OF IMPURITIES		25 lb. PBL drum	.48 lb.
Insoluble	0.005 %	2 x 25 lb. @ 1 1/2 lb. fan	
Cl	0.001 %		
Fe	0.001 %		
Heavy Metals (as Pb)	0.0001 %		
As	0.0001 %		

This reagent has an equivalent SO<sub>2</sub> value of about 54%.

B & A STOCKS AT CONVENIENT LOCATIONS

## LABORATORY CHEMICALS

### THE "PBL" DRUM

For numerous products in this listing of B&A chemicals, a "PBL" Drum is indicated as a 25-lb. package size. This is a sturdy fibre drum with a Polythene Bag Liner used for "difficult" chemicals.

The "PBL" Drum is used for a group of chemicals which heretofore have been packaged in glass jars. In addition, its use has been extended to another group of chemicals for which B&A considers their drums with ordinary liners to be less than adequate.

#### ECONOMICAL:

Extremely light tare weights reduce transportation expenses to the minimum.

#### STRONGER... DURABLE:

Drums made of extra-strength, water-proofed fibre for heavy duty service. Special construction features provide security from loss through breakage.

#### PURITY PROTECTION:

Polythene bag insert is clean, chemically inert to the contents, and seals tightly. It aids in keeping the product to the user in same fine condition as when produced; also helps keep it "factory fresh" in storage. With it, moisture pick-up, caking, dusting or lifting is minimized.

#### COMPLETE CLOSURE:

Multi-fold bag top plus deep-shoulder cover of drum make possible tight, tamper-proof closure after the drum has been opened.

For further information, see the new B&A Laboratory and Office

FOR LARGER QUANTITIES, INQUIRE NEAREST B & A OFFICE

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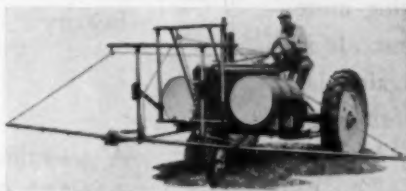
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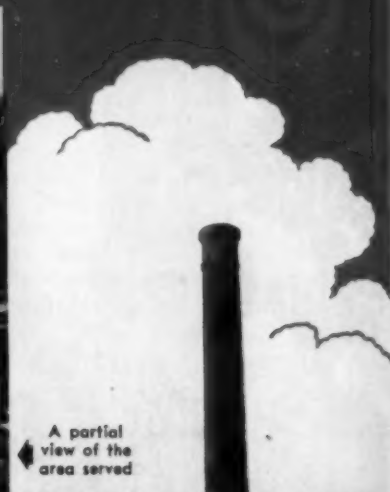
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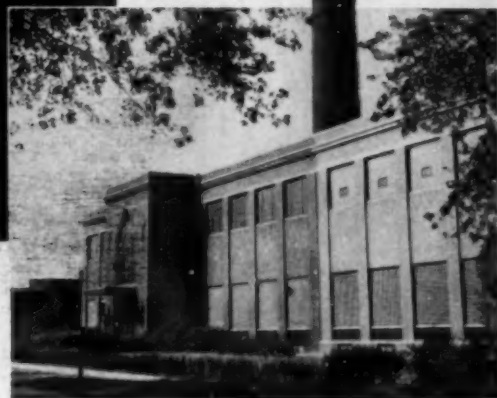
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# EXCESS STEAM TO EXCELLENT USE

In Central Heating System



A partial view of the area served



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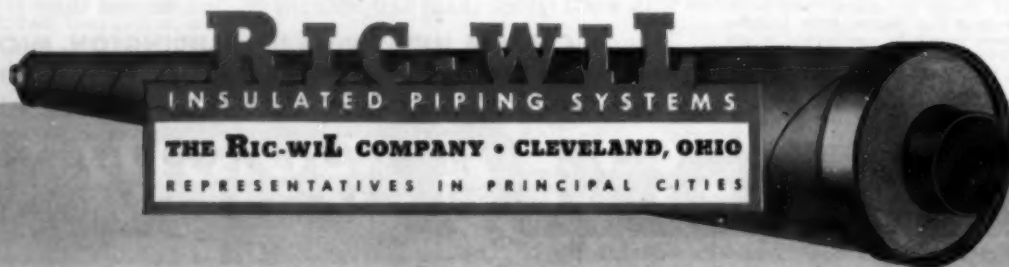
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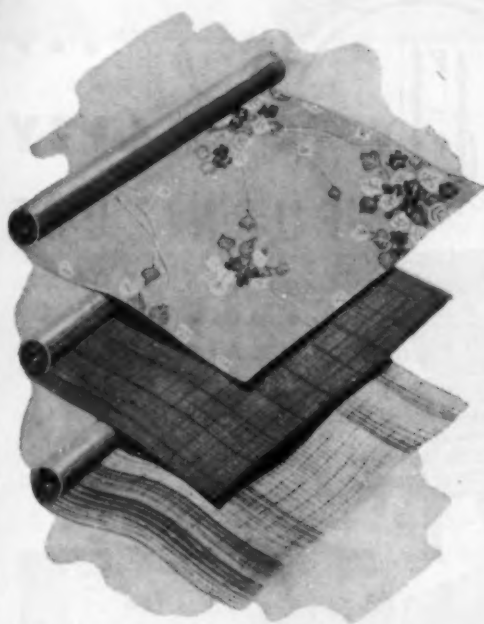
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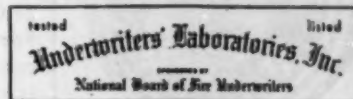
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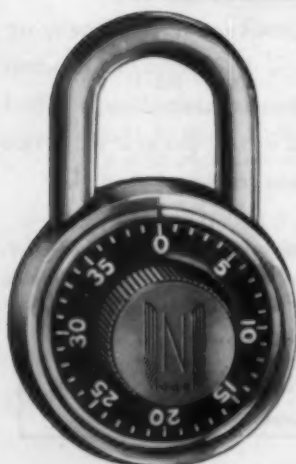
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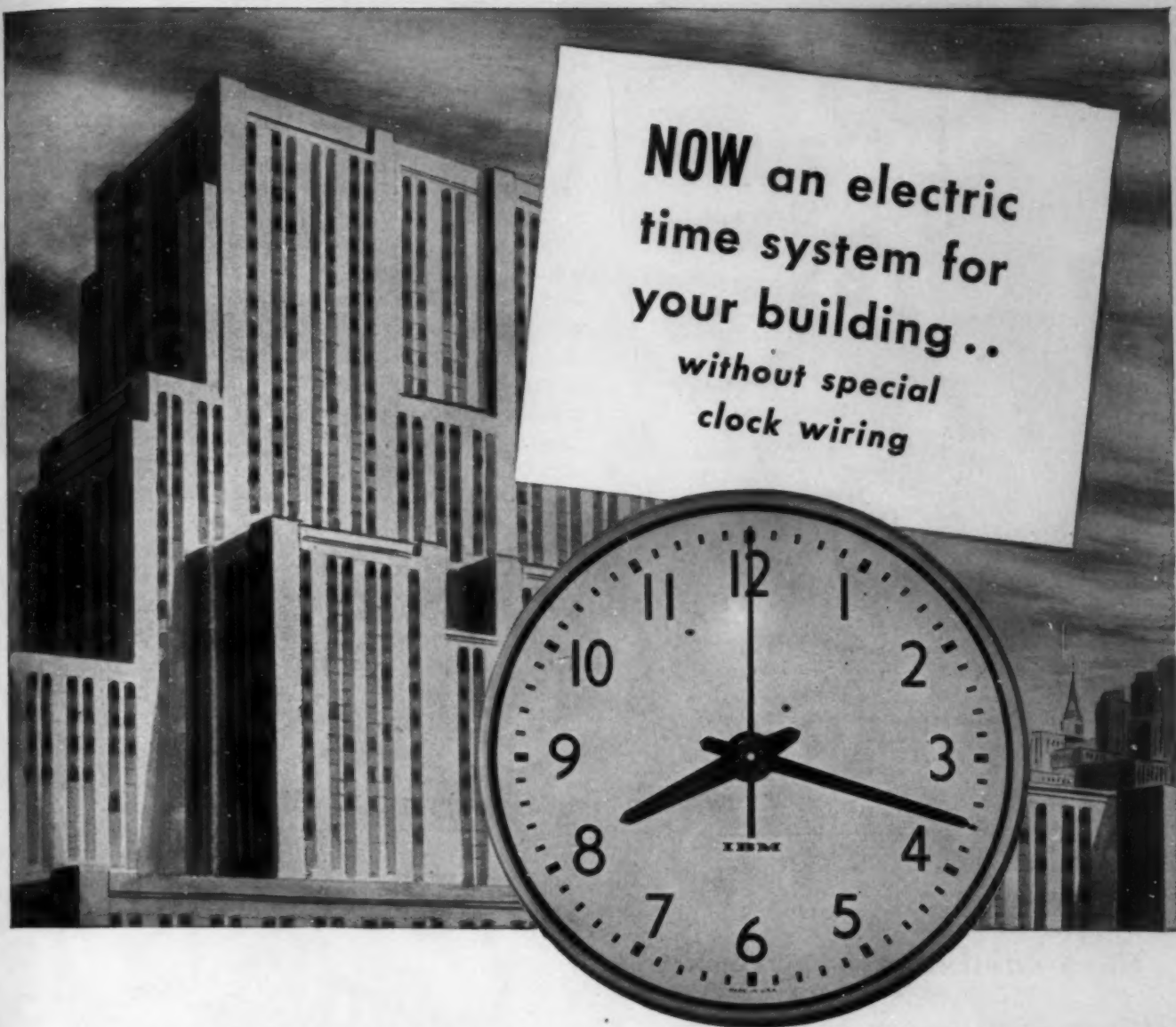
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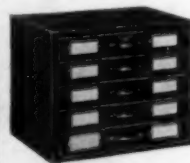
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Illustrated MF-6

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Contains Film Cabinets  
Power Rewinds - Splicers - Film Cleaners - Projection Tables - Reels - Cans - Complete Line

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HEAVY DUTY KITCHEN EQUIPMENT

FIXTURES OF EVERY DESCRIPTION

# AUDIO-VISUAL PROBLEMS?

**Consult your nearby Bell & Howell Educational Representative . . .**  
**He is specially trained to serve you**



No place in the United States is too distant for you to obtain the expert assistance of a Bell & Howell Special Educational Representative.

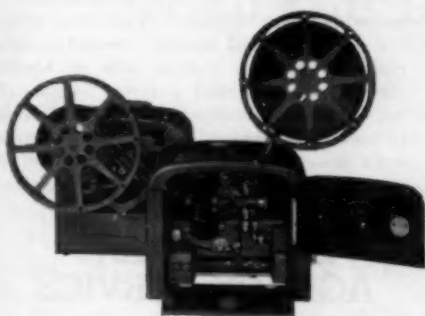
Is your problem one of training teachers in the most effective use of motion pictures? Planning a visual aid storage and workroom? Setting up a new audio-visual program?

Many of our Bell & Howell Special Representatives are former school administrators. They understand school problems thoroughly. Whatever your problem, there is a representative

near you ready to advise you on these problems.

Entirely without obligation on your part, or on the part of your school administration, you are invited to ask for his assistance on any audio-visual problem. To get this assistance, just call your local B&H Special Representative, or write Bell & Howell Company, 7192 McCormick Road, Chicago 45.

**. . . and ask him about this new proof of Bell & Howell dependability:**



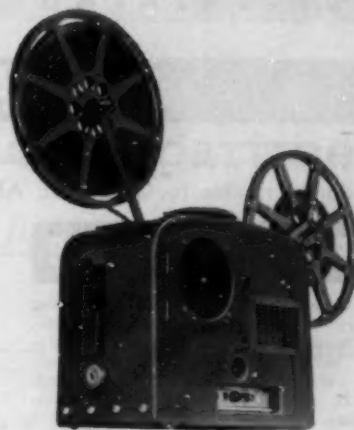
## NEW ACADEMY FILMOSOUND

Designed for 16mm sound or silent projection in larger rooms or halls. Separate speaker—8", 12", or power unit, as required. With 8" speaker provides *double* the sound output of any lightweight projector. Now (with 8" speaker) only . . . **\$495**

**GUARANTEED FOR LIFE.** During life of product, any defects in workmanship or material will be remedied free (except transportation).

A B&H Filmosound Projector, taken at random from stock, is in continuous operation projecting film on our laboratory test stand. As this page goes to press, it has run 1300 hours with no time lost for repairs.

Think what this means to you in terms of sound-film projector performance you can *depend on* . . . and in really low cost-per-hour operation.



## NEW SINGLE-CASE FILMOSOUND

Easy to carry and operate anywhere. Higher undistorted sound output than any other lightweight projector! Sound or silent 16mm projection. Built-in 6" speaker can be removed from case and placed near screen. With 6" speaker, an outstanding value at . . . **\$449**

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Since 1907 the Largest Manufacturer of Professional Motion Picture Equipment for Hollywood and the World



## Like Armor.... **WAX PROTECTS**



### Neo-Shine Wax... makes floors last longer

**FLOORS THAT** must withstand the abuse of frisky feet every day deserve the protection of Neo-Shine, Self-Polishing Wax. This water-dispersed wax is 50% richer in wax solids than ordinary liquid waxes. Neo-Shine forms a durable, protective surface which beautifies your floor and prolongs its life. It is self leveling and dries bright. Neo-Shine is safe to use on any floor. You'll appreciate the economy of Neo-Shine. It covers more square feet of floor per gallon. Write for a sample today.



**NEO-SHINE®**  
SELF SHINING WAX

**HUNTINGTON LABORATORIES, INC.**  
HUNTINGTON, INDIANA • TORONTO

## WANT ADVERTISEMENTS

The rates for want advertisements are: 10 cents a word; minimum charge, \$2.50.

Address replies to **COLLEGE AND UNIVERSITY BUSINESS**, 919 N. Michigan Avenue, Chicago 11, Ill.

### POSITIONS WANTED

**Business Officer**—Campus Store, Cafeteria, Commissary Management; Administration; General Supplies; Practical Manual Training for boys; had own shop; retired; thorough; single; non-drinker; permanent. Write to H. CROFUT, 18 Westover Terrace, West Orange, New Jersey.

**Dietitian**—Competent to assume complete charge of food department; efficient personnel, all purchasing, office procedure, food preparation and service; five years present position; available August first. Write Box CW 57, COLLEGE AND UNIVERSITY BUSINESS.

**Plant Superintendent**—Now employed in college \$500 enrollment; desires location west or southwest; engineering college graduate; with 23 years' experience in buying, construction, maintenance, including supervision of electricians, plumbers, carpenters, central steam plant, grounds and janitors; available at once. Write Box CW-54, COLLEGE AND UNIVERSITY BUSINESS.

**Superintendent of Buildings and Grounds**—Now available; 45 years old, over twelve years experience; will go anywhere. Write Box CW 56, COLLEGE AND UNIVERSITY BUSINESS.

**Food Executive**—Cafeteria and dining room; age 35; 17 years' experience; purchasing, cost control, menu making and general supervision; available at an early date. Write Box CW 52, COLLEGE AND UNIVERSITY BUSINESS.

### POSITIONS OPEN

**Manager of College Dormitories**—With acceptable philosophy of student housing and experience in furnishings to be responsible for assignments, general housekeeping procedures and methods, ability to supervise maids and janitors; should be college graduate; applicants apply to SELMA STREIT, Director of College Housing and Food Service, State College of Washington, Pullman, Washington; state age, educational training, experience, marital status, and salary expected; include picture.

**Campus Gardener**—For a large southeastern university; must be capable of planting, pruning, fertilizing, and treating diseased plants, grass, trees, etc., and be able to handle campus workmen; need a person capable of maintaining and improving plants and trees on this large campus. Interested applicants write direct to J. S. Bennett, Director of Operations, University of North Carolina, Chapel Hill, North Carolina.

### EMPLOYMENT AGENCY SERVICE

**Placement and Vocational Service** for University and College men and women. Home Economics graduates and Dietitians. We offer a personal employment service, of the highest ethical standards, to meet the individual requirements of Employees and Employers. Inquiries by mail given prompt attention. WINSHIP PERSONNEL SERVICE, 127 North Dearborn Street, Chicago 2, Illinois.

## LOOKING FOR SOMEONE?

Someone to fill a vacancy in your staff—a Business Manager—Superintendent of Buildings and Grounds—Purchasing Agent—Director of Food Service and Dormitories?

Or maybe you are thinking about making a change. If so, consider placing a "Want Advertisement" in the next issue of College and University Business.





## Modernize Your Home Economics Department with the Latest Frigidaire Appliances

Frigidaire's School Plan for purchasing appliances was announced only 2½ years ago—yet thousands of schools and colleges in all parts of the country have already taken advantage of it to equip their Home Economics departments. And the list is growing daily!

There's good reason for this immediate acceptance of the Frigidaire School Plan, for it benefits schools, teachers—and students.

Through this plan, schools can obtain the finest of modern kitchen and home laundry equipment—at savings of almost ½ the regular retail price. And for a period of five years these appliances are replaced with new models as they become available, at no additional cost to the school.

The work-saving features that win the praise of so many home-makers, make Frigidaire appliances well-suited for instruction purposes in the Home Economics Department. Teachers find that these up-to-the-minute products simplify the demonstration of modern home-making techniques, and maintain high interest in practice projects.

Students are stimulated by the opportunity to use the latest of Frigidaire equipment. As a result, they learn faster, retain more practical knowledge from their Home Economics courses.

### Get Details of Frigidaire School Plan

Learn how your school can save nearly one-half on new equipment for Home Economics laboratories and practice kitchens—and obtain new model replacements over a 5-year period without additional cost. Ask your Frigidaire Dealer for complete information on this plan, or write Frigidaire, Dayton 1, Ohio.

# FRIGIDAIRE

## Home Appliances

WHAT MAKES

*Boontonware*  
BOUNCE



INSTEAD OF

BREAK



Molded Boontonware looks and feels like quality institutional ware that you have known before. But drop it . . . there's the big difference . . . nine times out of ten it will bounce . . . not chip or break.

There are two important reasons for this exceptional durability which has practically eliminated breakage costs in leading hotels, restaurants, schools and hospitals throughout the country.

#### MATERIAL

Boontonware is made of the exciting new Melmac\* molding compound.

#### MOLDING KNOW-HOW

The material in itself is not the complete answer. Expert design, weight and curing are vital to the durability of the finished product. These are the molder's problems.

As a custom molder for 27 years, the Boonton Molding Co. has molded plastics by most methods. Quality is a rule with them. Boontonware is no exception to this rule. Melmac\* PLUS molding know-how makes Boontonware the best buy in heavy duty dinnerware.

\*REG. U. S. PAT. OFF.

National Distributor

**PARKER D. PERRY INCORPORATED**  
729 Boylston Street, Boston 16, Mass.

See Boontonware  
at leading Restaurant,  
Hotel and Hospital  
Supply Houses everywhere  
or write to us direct  
for more information.

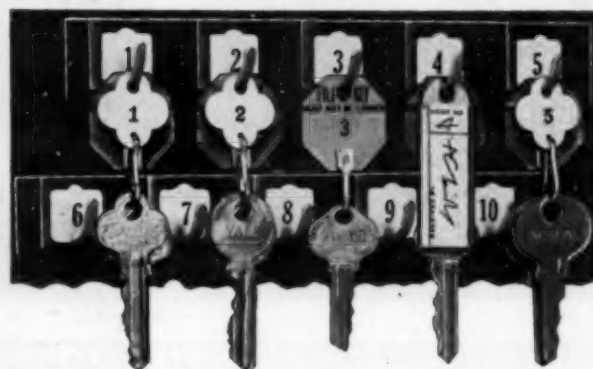
*Boontonware*  
*It lasts and lasts and lasts*

From 50 to 50,000

Sets of Keys

**MOORE**  
FILE KEY  
MUST NOT BE LOANED  
12345  
**KEY CONTROL**

*Is The Same !*



#### VISIBLE—ACCESSIBLE—CONVENIENT

By looking at the above illustration, a portion of a panel, it can be seen at a glance that the keys are well organized, accessible for instant finding and easy to return to their proper places.

#### PATTERN KEY

One of the important keys furnished by the manufacturer of the lock or the best key available is retained and permanently tagged as a "pattern" from which all subsequent duplicates are made. The "pattern key" is never loaned!

#### IT PAYS FOR ITSELF!

Experience has proven a Moore Key Control system costs nothing—it pays for itself! It saves the price of the investment many times over by elimination of countless hours of lost time, high priced locksmith and maintenance expense. It saves time, temper and money!

#### ATTENTION: SUPERINTENDENTS BUILDINGS AND GROUNDS

Colleges and Universities everywhere are using our equipment advantageously. Any bright young man or woman can easily install it. You will be surprised how helpful it will be.

Write today—attention of Educational  
Department, for descriptive literature.

**P. O. MOORE, INC.**

300 FOURTH AVE.  
NEW YORK 10, N. Y.



# Salad Magic

## THAT BUILDS A REPUTATION!

GOOD salads are one sure signpost of a good place to eat. And since your "salad reputation" depends so greatly on the dressing you use, it is false economy to top good salad makings with less than the best!

- Prepared from famous Heinz White Vinegar, blended with selected eggs, fine oil and other choice ingredients, Heinz 57 Salad Dressing points up the flavor of your salads to perfection.

- Ask your Heinz Man to show you the many advantages of using famous Heinz 57 Salad Dressing.

Ask Your Heinz Man About

**HEINZ** **57**  
Salad Dressing







## REALOCK FENCE

**Provides Permanent Property Protection**

Used in protection of power plants, schools, reservoirs, hospitals, disposal plants, and similar types of property, a Realock® Fence provides years of trouble-free service. Made of steel wire, heavily galvanized, it is tamper-proof, weather-resistant, low in cost—furnished with or without barbed wire at top.

Let us submit estimates for fence material ready for erection or covering complete installation by trained crews. Write to our nearest office.

©Reg. U. S. Pat. Off.



WICKWIRE SPENCER STEEL DIVISION

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THE COLORADO FUEL AND IRON CORP.

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THE CALIFORNIA WIRE CLOTH CORP.

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BRANCHES & DISTRIBUTORS IN KEY CITIES EVERYWHERE

**You can now get . . .**



**MORE**  
than a **MOWER**  
for your  
**MONEY**

### PEARCE "Air-Lift" ROTARY MOWER

- Cuts grass of any height
- Lifts "down" grass into cutting zone
- Cuts cleanly and uniformly
- Self propelled, ruggedly built for low cost maintenance

The Pearce "Air Lift" is one of the original rotary type mowers . . . service proved over a period of 12 years. It has all of the desirable features you expect in this type of mower and is of exceptionally rugged construction to withstand continuous, heavy-duty service. Both mowing ability and serviceability are second to none! Available in 25-inch and 31-inch cutting widths as well as 18-inch cut for trimming in confined areas.



**FREE BULLETIN** — Write for it today. Contains detailed mechanical specifications. Compare, feature for feature, with any other power mower and you'll agree that here is the answer to low-cost lawn maintenance. Write Dept. CU-5.

**THE PEARCE CORPORATION**

144 E. HIGHLAND AVE.  
MILWAUKEE 2, WIS.

**IMPROVED!**



**Sun Ray Woolers**  
(for all disc-type floor machines)  
provide a quicker, safer finish

THE WILLIAMS COMPANY—Steel Wool Products CUB-549  
London, Ohio

Send literature showing how Sun Ray's radial strands save time and money and make floors safer.

Name \_\_\_\_\_  
Institution \_\_\_\_\_  
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## SERVICE

Between editorial material and advertising pages in this and every issue —there's a detachable, postage pre-paid card . . . to help you get product information on one or a dozen items with a minimum of effort and time. As you read the advertising pages and the descriptions in the "What's New" section, check the items that interest you . . . use the card. Sign it, mail it. The manufacturer of each item checked will be asked to send you complete details, no charge, no obligation.

**COLLEGE and UNIVERSITY  
BUSINESS**

# all 7 surveys prove SLOAN superiority

Another reason why more SLOAN Flush Valves are sold than all other makes combined

91.8% of all Architects prefer SLOAN

...of these, 85% prefer SLOAN exclusively!

10/0

63.0% of all Hotels\* are SLOAN-equipped  
...of these, 92.7% are equipped with SLOAN exclusively!

86.5% of all Master Plumbers\* prefer SLOAN  
...of these, 80.4% prefer SLOAN exclusively!

Another reason why more SLOAN Flush Valves are sold than all other makes combined

95.2% of all Plumbing Jobbers\* prefer SLOAN  
...of these, 90.9% prefer SLOAN exclusively!

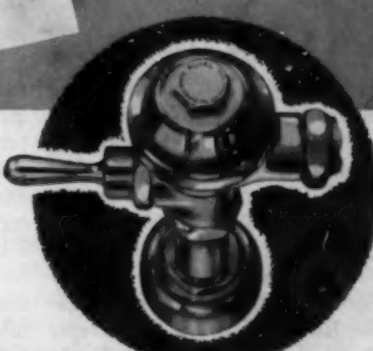
92.5% of all Hospitals\* are SLOAN-equipped  
...of these, 68.7% are equipped with SLOAN exclusively!

93% of all School Systems\* are SLOAN-equipped  
...of these, 54.6% are equipped with SLOAN exclusively!

81.3% of all Office Building Managers\* prefer SLOAN  
...of these, 78.7% prefer SLOAN exclusively!

**SLOAN Flush VALVES**

SLOAN VALVE COMPANY • CHICAGO • ILLINOIS



SLOAN VALVE COMPANY • CHICAGO • ILLINOIS

# WHAT'S NEW

MAY, 1949

Edited by Bessie Covert

TO HELP you get more information quickly on the new products described in this section, we have provided the postage paid card opposite page 40. Just circle the key numbers on the card which correspond with the numbers at the close of each descriptive item in which you are interested. COLLEGE and UNIVERSITY BUSINESS will send your requests to the manufacturers. If you wish other product information, just write us and we shall make every effort to supply it.

## Gray Magic Royal Typewriter



The new Royal typewriter, known as the Gray Magic, is finished in a new soft gray tone developed by Royal to give added eye comfort to the operator by elimination of glare. An interesting feature of the new Gray Magic Royal is the shape of the keys. Known as "Finger-Flow Keys," they are flat in front, thus minimizing the possibility of catching the key above when typing, and permitting more space between the rows of keys. Keys have a concave surface, shaped to fit the finger.

Easy removal of the cylinder with the thumb and finger of one hand for cleaning of the cylinder and feed rolls and for changing in cases of special platen substitutions is another feature of the new Royal. Other important improvements include a non-slip paper feed and a newly-designed line space lever. The machine retains the "Magic" margin, "touch control," automatic paper lock, Time Saver Top and other advantages of careful construction, fine quality and ease of operation of the Royal line. Royal Typewriter Company, Inc., Dept. CUB, 2 Park Ave., New York 16. (Key No. 79)

## Glass Surface Troffer

A hinged enclosing glass without screws, springs or latches is a feature of the new Guth G-S-T Glass Surface Troffer. This new lighting fixture has side-of-channel starters that are easily reached and changed and the glass is a curved panel of Ribbed Albalite. The new unit is finished in white Permalux with ornamental Silvan end ornaments. The Edwin F. Guth Co., Dept. CUB, 2615 Washington Ave., St. Louis 3, Mo. (Key No. 80)

## Model V-A Floor Machine

The new Model V-A floor machine is available with or without a solution storage tank mounted on the handle and is designed both for floor maintenance work and for shampooing rugs and carpets. A series of easily interchangeable attachments is available for converting the machine for scrubbing, waxing, polishing, buffing, sanding, grinding or steel-wooling floors of all kinds.

The new machine utilizes a vertical gear reduction motor in a 1/3 h.p. machine with a 14 inch brush spread. The motor is of the brushless, capacitor-start type designed for rugged dependability. Hild Floor Machine Co., Dept. CUB, 740 W. Washington St., Chicago 6. (Key No. 81)

## Microscope Illuminator



The new Spencer No. 735 Lamp has been designed for routine and advanced laboratory work to give correct microscope illumination. With efficient optics and precise, conveniently located mechanical controls, the lamp furnishes both Kohler and parallel illumination for bright field and phase microscopy, photomicrography, microprojection and dark field illumination.

The illuminator is designed for cool operation and the reflecting mirror is quickly and precisely adjusted at any time by means of 3 screws. Focusing can be done by either left or right hand and the lamp body may be separated for access to the interior parts by releasing 2 thumb screws. The new No. 735 may be obtained with or without an iris diaphragm and with single or multiple filter attachment. American Optical Co., Scientific Instrument Div., Dept. CUB, Buffalo 15, N.Y. (Key No. 82)

## Mimeograph Drawing Instruments

A new set of mimeograph drawing instruments manufactured of molded plastic has been announced by A. B. Dick Company. The new process of manufacture permits thicker lettering guides which do not slip or slide while in use; tapered character openings in the guides for easier insertion and for accurate control of the stylus point; identification letters located below the character openings; dual lettering guides which give 2 alphabet styles, and maintenance of dimensions, quality, uniformity and color fastness.

The new styli each have 2 working ends and are designed for production of ruled forms, for use with the lettering guides and for screen plate shading. The rectangular molded plastic handles with rounded finger grips prevent rolling on table or desk and a roll point stylus has been designed for writing signatures on stencils. Screen plates, which are used for shading, are also available in molded plastic in a 3 by 6 inch size. A. B. Dick Co., Dept. CUB, 720 W. Jackson Blvd., Chicago 6. (Key No. 83)

## Stainless Steel Mop Wringer

A new mop wringer, made of stainless steel for sanitation and ease of maintenance, has recently been announced. The wringing device on the new unit is designed for efficient and easy operation, a minimum of effort producing a maximum of leverage. The new unit is neat in appearance, durable, rustproof and



requires a minimum of maintenance. Market Forge Co., Dept. CUB, Everett 49, Mass. (Key No. 84)



## Faucet Rebuilding Unit

Permanent repair or rebuilding of faucets is now possible with the new



Sexauer No. 100 Giant "Handy Andy" assortment. Containing 1080 Sexauer parts, the assortment is housed in a sturdy, compartmented, steel kit with locking cover and carrying handle for ease in transporting to place of need. Included in the assortment is a properly balanced stock of everything needed to rebuild any type faucet and many small valves. It saves time and effort in maintenance and makes it possible to do a complete job instead of making a temporary repair. **J. A. Sexauer Mfg. Co., Inc., Dept. CUB, 2503 Third Ave., New York 51. (Key No. 85)**

## Silex Coffee Maker

The new Silex coffee maker has a newly developed "self-sealing, self-centering" vacuum plug which creates a vacuum seal without pressure, and an entirely new filter to permit faster and more efficient infusion. A specially designed tapered decanter lip and stainless steel slotted decanter cover simplify pouring. The new glass coffee maker is attractive in appearance and is designed for more efficient and economical operation, easier handling and serving. The handle can be quickly removed and replaced when replacing lower bowl and the unit is made of Pyrex Brand glass. **The Silex Company, Dept. CUB, Hartford 2, Conn. (Key No. 86)**

## Celotex Decorated Panels

Made of tempered hardboard to which are fused hard, colorful, plastic finishes, Celotex Decorated Panels give the effect of ceramic wall surfaces and are available in two grades, known as Celotex

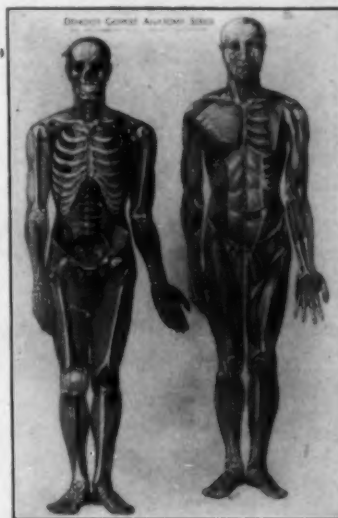
chrome and Lustertile. They are designed for use either to cover existing walls or in new construction and are supplied in sheets 4 feet wide. Three surface designs are available: Tile, Plain and Streamline. Peach, ivory, light green, light blue and white are standard colors with other colors available on special order.

The wall-sized panels are strong but light weight and easy to handle. They may be sawed, cut and drilled with ordinary woodworking tools. The surface finish of the panels is wear-resistant, resists ordinary acids, alkalis, grease, moisture and vermin, does not chip or peel and is not affected by heat and cold. The smooth surface is easily cleaned and kept in a sanitary condition by washing as the hard finish does not absorb or hold dirt or dust. **The Celotex Corp., Dept. CUB, 120 S. La Salle St., Chicago 3. (Key No. 87)**

## Skeleton and Circulation Charts

A series of anatomy charts, the originals of which were done in oil by P. M. Lariviere, is now available from Denoyer-Geppert. The first of the series shows the front and back views of the skeleton and muscles in almost life size with the ligaments on one side. The skeletal reproduction on the left and the muscular development on the right of the same chart make it possible for students better to appreciate the intimate relationship of these structures to one another.

Two charts showing circulation are also almost life-size and portray the arterial and venous systems in one chart and the scheme of circulation, portal circulation and capillaries in another. All figures are drawn against a light blue background to accentuate the anatomical detail. The charts are available with plain rollers top and bottom or with



spring roller mounting. **Denoyer-Geppert Co., Dept. CUB, 5235 Ravenswood Ave., Chicago 40. (Key No. 88)**

## Product Literature

- A new sound slide-film, "Modern Commercial Dishwashing," has been introduced by Wyandotte Chemicals Corp., Wyandotte, Mich., to illustrate recommended methods for both hand and machine washing of glassware, dishes and silverware. Procedures are based on extensive laboratory tests and the film is designed as an educational service to those concerned with food service. Arrangements for showing the film can be made through Wyandotte district offices and a 24 page booklet, which parallels the film in pictures and instructions, is also available. **(Key No. 89)**

- Auxiliary buildings of various types required for school and college purposes on either a temporary or a permanent basis are described in the two folders on the "Blaw-Knox Universal Building" issued by the Blaw-Knox Company, Farmers Bank Bldg., Pittsburgh 30, Pa. Diagrammatic drawings illustrate text giving specifications, and photographic illustrations show the buildings in actual use as classrooms and offices. One folder, entitled "School Days in a Blaw-Knox Universal Building," gives specific information and specifications with suggested floor plans for use of the prefabricated material for educational buildings. **(Key No. 90)**

## Suppliers' News

**Airkem, Inc.**, manufacturer of odor counteracting and air freshening products, announces removal of its offices and plant from 7 E. 47th St. to 241 E. 44th St., New York 17.

**C. A. Dunham Company**, 400 W. Madison St., Chicago 6, manufacturer of heating systems and products, announces completion of an addition to its Michigan City, Ind., factory. The new building will be used for storage of finished products just prior to shipment and to house the order and billing departments, formerly located in Chicago.

**Marsh Wall Products, Inc.**, Dover, Ohio, manufacturer of "Marlite" plastic-finished wall and ceiling panels, announces completion of a new building program to provide greatly expanded facilities for production. The building program is part of the expansion plan announced when Marsh became a subsidiary of the Masonite Corp.

**United States Rubber Co.**, 1230 Avenue of the Americas, New York 20, manufacturer of foam rubber mattresses and rubber sundries, announces removal of its Chicago offices, serving five mid-western states, from 440 W. Madison St. to The Merchandise Mart, Chicago 54.

# Buy Baker Quality

**LONGER LASTING LINENS MEAN LOWER LINEN COSTS**

That's the reason these famous brands distributed by BAKER are so popular with college and university buyers.

**SAMPSON and SANDOW**  
(ribbed weave) (plain weave)

Bath Towels loomed to Baker's exacting specifications for balanced construction.

**NORTH STAR and CHATHAM**  
Blankets. The quality blankets that keep their new look.

**DWIGHT-ANCHOR** Sheets and Pillow Cases, distributed exclusively by Baker.

Write for details and prices

## **H.W. BAKER LINEN Co.**

Est. 1892

Oldest and Largest Organization of its kind in the U. S.

315-317 Church Street, New York 13, N. Y.

and 12 other cities





# Time to save time—now!

**Time costs money**—management time, employee time, equipment time, every kind of time. Obviously cuts in time-costs are tonics for your entire operation any time—but nowadays especially. We maintain that a kitchen-wide installation of Hobart food and kitchen machines will deliver more service per hour per dollar—keep operations ticking like clockwork. Here's why:

**Low Preparation Costs.** Cut operating costs while developing food quality and enhancing flavor with Hobart mixers, slicers, choppers, peelers, food cutters and coffee mills. They cut waste, deliver more servings at lower preparation cost. Hobart meat saws deliver more appetizing portions per carcass, cut meat-cutting time up to 80%.

**Economical Dishwashing.** Plan on more than highest possible standards at

minimum cost, with Hobart dish scrapper, dishwashers and glasswashers. Plan, too, on peak efficiency in minimum space. With 18 models, built to today's performance peak through decades of work with your industry, you can rely on an installation meeting your needs exactly.

**Longer Service.** Hobart is the oldest, largest manufacturer of food machines in the world—knows how to build 'em for

service. Designs are streamlined, easily cleaned and kept clean. You'll get more service from every Hobart machine.

## **Simplified Planning & Purchasing.**

With 11 separate categories of kitchen machines available in 44 models for complete range in size, capacity and use—there's a Hobart model to serve every need better. Orders can be taken now for quick shipment . . . and Hobart representation is as near you as your phone. Just call.

**STEAKMAKER** tenderizers are now manufactured by Hobart-Federal Engineering Corp., a Hobart subsidiary.

**NOW IS THE TIME TO SAVE TIME!**



## **Hobart** Food Machines

THE HOBART MANUFACTURING CO., TROY, OHIO • Factories in Troy, Dayton, Greenville, Minneapolis, U.S.A. • The World's Largest Manufacturer of Food and Kitchen Machines

CANADA • BRAZIL • ENGLAND • AUSTRALIA • FRANCE





# A Playing Surface that Promotes Confidence

## HELPS MAKE A WINNING TEAM

So give your players the advantage of a *Gloss Seal finish* on your gym floors. *Gloss Seal*, which contains genuine phenolic resins, provides a playing surface that is thoroughly resilient, one that yields to and facilitates fast, safe footwork and teamwork. *Gloss Seal* also supplies a tough protective finish—resists heel burns, acids, alkalis, harsh soaps, water, friction—and won't darken or lose its transparency! Available in several *surface* and *penetration* types, *Gloss Seal* meets specific needs in classrooms, in corridors, and in places of exceptionally heavy traffic, as well as in the gymnasium.

Before you refinish the floors in your school, have a talk with the nearby *Finnell Floor Specialist*. His knowledge is broad and practical, sharing as he does *Finnell's* four decades of specialized experience in floor care.

For consultation, free floor survey, or literature on *Finnell Floor Seals, Waxes, Cleansers, Maintenance Machines, and Accessories*, phone or write nearest *Finnell Branch* or *Finnell System, Inc.*, 4405 East St., Elkhart, Ind. Branch Offices in all principal cities of the United States and Canada.



# FINNELL SYSTEM, INC.

*Pioneers and Specialists in*

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES  
IN ALL  
PRINCIPAL  
CITIES